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CHAMBLY CANAL

MANAGEMENT PLAN

Canada

CHAMBLY CANAL

MANAGEMENT PLAN

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CHAMBLY CANAL
NATIONAL HERITAGE CANAL
MARCH 1990

MANAGEMENT PLAN

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▲
Lock 8, Chambly Canal

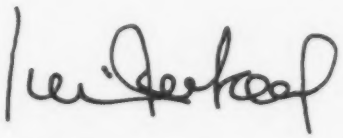
FOREWORD

I am extremely pleased to present the master plan for ***the Chambly Canal****.*

This document will serve over the next few years as the basis for work on the preservation, development and management of the historical and natural resources that make the corridor of the Chambly Canal one of the jewels of our heritage.

The proposed approach should give Canadians, now and in the future, through a living memorial, an understanding and appreciation of what was involved in the operation of waterways in the 19th century.

The preservation and development of the distinctive character of the Chambly Canal will also contribute to tourism development based on the harnessing of the environmental and heritage resources of the Richelieu Valley.



Lucien Bouchard
Minister of the Environment

1. CONTEXT

1.1 Background

The Richelieu River was canalized in the 19th century in response to economic imperatives. The proximity of the United States and trade between the two countries gave rise to considerable economic competition. Early in the 19th century, the project to construct the Erie and Champlain Canals posed a serious threat to the Canadian colony. The opening of the Chambly Canal to shipping in 1843 meant that the rapids on the Richelieu River could be bypassed and, for the first time, made continuous navigation possible between Lake Champlain and Chambly Basin. Despite the small size of its locks, the Chambly Canal furthered Canada-U.S. trade activity on the Richelieu, which grew until the early 20th century. Today, pleasure-boaters are the main users of the Chambly Canal. In 1972, the Chambly Canal, along with seven other Canadian canals, was transferred from the Department of Transport to the Canadian Parks Service (Parks Canada) on condition that its management reach beyond its transportation role and stress the protection, enjoyment and interpretation of the natural and cultural heritage values it offers.

1.2 Board recommendations

In May 1929, the Historic Sites and Monuments Board of Canada declared the Chambly, Carillon and Lachine Canals to be of national historical significance, along with 11 other Canadian heritage canals. The Board also recommended that suitable sites be acquired to commemorate these canals. In 1930, a commemorative plaque was erected at the Chambly Canal. In November 1987, the Board reaffirmed the national historical significance of the Chambly Canal, part of Canada's national canal system, stating once again that it should be commemorated with a plaque.

The Board also recommended that research be conducted on the canal structures or features likely to be of national significance.

In November 1988, the Board pointed out that certain features, notably the old lock houses and bridge keeper's cabins still remaining and one of the swing bridges, are of historical interest and should be preserved.

1.3 Location

The Chambly Canal runs along the west bank of the Richelieu River between Chambly and St. Jean. Located on the Richelieu-Hudson route, the Chambly Canal, together with the St. Ours Lock and the Champlain Canal, completes the link between Sorel and New York City.

1.4 Property

The federal Chambly Canal property is some 20 km long. The canal has nine locks, raising and lowering boats almost 24 metres between Chambly Basin and the Upper Richelieu. The first eight locks are in the Chambly sector, while the last is in St. Jean. These locks were rebuilt in the late 19th century, and most of them have retained the main features of that period and are still hand-operated.

Lock length	: 36.72 to 38.4 m
Lock width	: 7.08 to 7.41 m
Normal draught	: 2 m
Overhead clearance	: 8.8 m

A dozen movable bridges cross the canal, and most of them have kept their original turn-of-the-century structure.

The lock houses and bridge keeper's cabins are associated with canal operations. Six of them still look the way they did at the turn of the century.

With the exception of some sections which were widened by the Department of Transport during the 1960s, the canal has for the most part retained its original route, draught and width.

The old towpath still runs along the east bank of the canal from Chambly to St. Jean.

1.5 Facilities and services

Mooring wharves are provided for pleasure-boaters near most locks and movable bridges. The lock houses at locks 1, 2 and 3 in Chambly and lock 9 in St. Jean have visitor reception and information counters as well as washroom facilities. There is a theme exhibition module at locks 1, 2 and 3 in Chambly. The towpath is used for walking and bicycling. Public parking is available in Chambly at locks 1, 2 and 3, whereas the parking lot at lock 9 in St. Jean is intended primarily for canal employees. There are picnic tables at lock 9 and on the mole at the canal entrance in St. Jean. Interpretation activities are provided by interpretation guides in the Chambly sector. During the winter months, there are skating rinks on the canal in St. Jean, St. Luc and Chambly, and these are run under yearly agreements by the municipalities concerned.

1.6 Number of visitors

The Chambly Canal was long used almost exclusively by pleasure craft. Over the years, though, a number of activities have been introduced on the canal banks (walking, cycling, observation and interpretation), and most visitors are now land-based. In 1988, the number of boats registered at the two ends of the canal stood at 4,175 in Chambly and 4,543 in St. Jean. Given the number of pleasure-boaters on board these boats, this brought the canal's water-based clientele to 13,900 people.

Moreover, during this same period, from mid-May to mid-October 1988, an estimated 150,000 or more people visited the canal banks. More than 16,000 people used the visitor reception and interpretation services at locks 1, 2 and 3 in Chambly, while 4,400 people took part in guided tours in this sector.

2. FUTURE OF THE CANAL

2.1 Theme

The general theme for the canals along the Richelieu is:

> "Canals along the Richelieu: economic strategy and role in development of international trade."

This theme is built around the following secondary themes:

- trade links: economic importance of the river and impact of the canals on international trade;
- technological development: technological contributions that have marked navigation on the Richelieu River;
- natural environment: nature and scope of obstacles to navigation;
- modern recreational corridor: evolution of the Richelieu Valley's role.

At the Chambly Canal, this general theme will be developed so as to emphasize the physical features of the canal and its specific role in Canada's history; several aspects of this theme will thus be stressed, namely:

- transportation of lumber and international trade;
- canal system and development of its operating technology.

2.2 Objectives

The overall objective which the Canadian Parks Service intends to pursue at the Chambly Canal is to consolidate the heritage and recreational role of the site in order to develop a public activity corridor (boating, interpretation and recreation) between Chambly and St. Jean. Thus, while ensuring that recreational navigation is maintained, the development of the canal should promote:

- preservation of the historical and natural heritage;
- public awareness and appreciation of the various heritage features that make the canal of national significance;
- public access to sites with potential for recreation and historical and nature interpretation;
- integration of facilities and complementary nature of activities and services on the federal Chambly Canal property and adjacent public land.

2.3 Concept

Based on the creation of a linear park, the development of the Chambly Canal property is organized from a water — and land — based activity corridor linking two multipurpose activity areas, in Chambly and St. Jean, to which development hubs are added, namely a secondary activity area on Fryer Island and rest areas at bridge 7, south of St. Thérèse Island and in St. Jean.

2.4 Guidelines

2.4.1 Navigation

- Maintenance of pleasure-boating
- Provision of basic facilities for safety and comfort of pleasure-boaters
- Maintenance of present route and heritage locks
- Upgrading of information services and of access to the banks for short stops
- Technical and aesthetic regulations concerning private docks along the canal
- Canal cruises (private enterprise)

2.4.2 Preservation of the heritage canal

- Maintenance of the canal's original route
- Restoration of the prism and stabilization of canal banks
- Preservation and development of towpath
- Preservation and restoration of locks

- Maintenance of bridge structures in their current locations
- Preservation of heritage lock houses and bridge keeper's cabins
- Future replacement of modern lock houses and bridge keeper's cabins with buildings of turn-of-the-century architecture
- Preservation of the old superintendent's house

2.4.3 Interpretation

- Creation of activity centres in Chambly and St. Jean focusing on historical interpretation:
  — theme exhibit (indoors)
  — outdoor facilities and activities
- Creation of an activity centre on Fryer Island focusing on nature interpretation:
  — outdoor facilities and activities
- Establishment of interpretation tours:
  — along the canal banks (multipurpose path)
  — on the canal (cruises)

2.4.4 Environmental protection

- Preservation of existing vegetation
- Re-vegetation of banks
- Plantings
- Zoning of Fryer Island for natural resource conservation purposes

2.4.5 Recreation

- Activities compatible with conservation and interpretation
- Non-organized sports or competitive activities requiring no supervision
- Winter activities

2.4.6 Access and traffic

- Creation of a link for cyclists and pedestrians between Chambly and St. Jean
- Major access points in Chambly and St. Jean
- Secondary access points along Highway 223
- Access for pedestrians and cyclists to the canal banks from existing structures (bridges and locks)

2.4.7 Regional integration

- Affirmation of the distinctive character of the Chambly Canal
- Contribution to the varied and complementary nature of points of interest in the region
- Creation of a tourist corridor integrated with the Richelieu Valley circuit
- Co-operation with local organizations

2.5 Development sectors

2.5.1 Canal and canal bank corridor

- Multipurpose path on towpath
- Rest and observation areas
- Interpretation panels
- Roadside rest areas
- Mooring areas
- Walks (Chambly and St. Jean)

2.5.2 Chambly activity area (visitor reception, interpretation and recreation)

- Parking lot
- Service building (visitor reception, information, interpretation, washrooms and administration)
- Picnic area
- Departure area for cruises
- Interpretation area (outdoor facilities)

2.5.3 St. Jean activity area (visitor reception, interpretation and recreation)

- Place du Quai*: public square including:
  — rest and observation areas
  — multipurpose path
  — parking lot and service road
  — boarding area for cruises
- Lock 9:
  — parking lot
  — picnic and rest area
  — service building (visitor reception, information, interpretation, washrooms and administration)
  — replacement of the present lock house
  — outdoor interpretation facilities

2.5.4 Fryer Island activity area

- Acquisition of the northern part of the island (multipurpose path)
- Picnic and rest area
- Service building (washrooms)
- Outdoor interpretation modules
- Mooring areas

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* Present policy is to hand over Place du Quai to the town of St. Jean since it is an urban facility.

2.5.5 Bridge 7 rest area

- (Existing) parking lot
- (Existing) picnic and rest area
- Service building (washrooms)
- Outdoor information modules

2.5.6 St. Thérèse Island rest area

- Parking lot
- Picnic and rest area
- Outdoor information modules

2.5.7 St. Jean rest area

- Picnic and rest area

3. IMPLEMENTATION

Considering the costs involved and the resources available, the implementation of the management plan may be spread over a 15-year period. Work will thus be carried out in stages, and priority will be given to those projects judged to most urgent with respect to preservation of heritage resources and access to the canal banks, while maintaining recreational boating.

In addition, all major capital projects provided for within the implementation of this management plan will be the subject of development plans which will specify the scope and exact nature of the work to be carried out, on the basis of the results of socio-economic analysis.

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CHAMBLY CANAL:
Navigable waterway
and national heritage canal

The Chambly Canal runs some 20 kilometres along the west bank of the Richelieu River, southeast of Montreal, between Chambly and St. Jean. Nine locks raise and lower boats almost 24 metres between Chambly Basin and the Upper Richelieu.

The opening of the Chambly Canal in 1843 made continuous navigation possible for the first time between Lake Champlain and Chambly Basin.

Since its transfer from Transport Canada to the Canadian Parks Service (Parks Canada) in 1972, it has been part of the network of Canadian heritage canals.

The Chambly Canal has retained both its original route and its old structures from the late 19th and early 20th centuries. It attests to the technological and economic significance of canalizing the Richelieu, highlighting the canal's role in the development of inland navigation and international trade between Canada and the United States.

Now used by pleasure craft, the Chambly Canal is one of the most important recreational facilities in the Richelieu Valley. It is part of the extensive network of navigable inland waterways in eastern Canada and the United States. Located on the Richelieu-Hudson route, the Chambly, St. Ours and Champlain canals complete the link between Sorel and New York City.

SUMMARY OF POLICIES AND RECOMMENDATIONS

1. In May 1929, the Historic Sites and Monuments Board of Canada recognized 14 canals, including the Chambly Canal, as having national historical significance.

2. In July 1971, the federal government approved the transfer to the Canadian Parks Service (Parks Canada) of eight heritage canals, including the Chambly Canal.

   These canals were transferred on condition that their management reach beyond their transportation role and stress the protection, enjoyment and interpretation of the natural and cultural heritage values they offer.

3. In 1973, an interdepartmental committee recommended new policies and new programs for these canals, with a view to the protection and interpretation of the natural and historical heritage while maintaining the traditional transportation role of these canals.

4. In 1979, the Parks Canada Policy defined the agency's general objective for heritage canals as well as the secondary objectives associated with public understanding and enjoyment of the canals and the protection of heritage resources.

5. In November 1987, the Historic Sites and Monuments Board of Canada once again recognized that the Chambly Canal, part of Canada's national network of heritage canals, had national historical significance and should be commemorated by a plaque.

   The Board also recommended that research be conducted on the canal structures or features likely to be of national significance.

Chambly Canal

6. In November 1988, the Board noted that "because of a history of frequent modification and renovation, the Chambly Canal retains few structural features which can be considered of intrinsic historic significance comparable to the relatively untouched Rideau Canal structures"... The Board did, however, note certain elemens which, although they could not be considered to be of national significance, do retain sufficient historical interest and integrity to warrant the Service giving them priority for preservation. These are: the surviving Lock and Bridge Watchhouses and one of the canal swing bridges.

MANAGEMENT PLAN

The goal of the management plan is to present the priorities for long-term preservation, use, development and management of the Chambly Canal and its resources.

This document is the outcome of a planning process which began a dozen years ago. Numerous research projects and development studies were conducted and orientation papers produced over this period, and they contributed to highlighting the various aspects of the question of developing the canal. These studies were also involved in the drafting of the preliminary management plan submitted for public consultation in 1984.[1]

The public consultation program was also a chance to distribute information concerning Canadian Parks Service policy with respect to heritage canals, to raise public awareness of the agency's development objectives at the Chambly Canal and to give the public the opportunity to express its views on the proposed development concept.[2]

The comments made by organizations and individuals brought home to the Canadian Parks Service the interest aroused by the project, as well as certain specific expectations.[3]

This management plan thus incorporates the results of these different planning phases; it specifies the objectives and principles which will guide Canadian Parks Service work at the Chambly Canal. Since the implementation program may be spread over a 15-year period, this document is intended as a management tool that is both flexible and effective, in order to meet the objectives set while offering some adaptability to changing conditions.

Later studies to complement the planning phases will specify, for each planned development site, the scope of the facilities required on the basis of demand and of the development context of properties adjoining the canal.

1. Preliminary management plan — February 1984
2. Development concept — public participation program — July 1984
3. Public participation program report — August 1985

CANALS AND NAVIGATION ROUTES

● ● Canadian heritage canals

■ ■ U.S. canals

Lakes, rivers

●●● Navigation routes

— — Canada-U.S. border

0 0 100km

CANADIAN PARKS SERVICE POLICY

The Canadian Parks Service's objective with respect to heritage canals is:

"To encourage public understanding and enjoyment of Canada's natural and cultural heritage by protecting for all time the heritage resources of certain federally operated canals and by operating these canals for recreational use."[4]

This objective underlies certain guiding principles concerning the preservation and use of national heritage canals:

- to ensure the protection of national heritage resources and preserve the historical and unique aspects of each canal;
- to maintain navigation along heritage canals, since this is an inherent part of their historical value;
- to develop information and interpretation programs to help visitors understand and appreciate the heritage value of each canal;
- to develop a variety of leisure activities that enable visitors to enjoy the recreational potential of the canal's land and water resources while still ensuring the protection of heritage resources.

In accordance with these principles, the Chambly Canal should be developed in such a way as to protect heritage structures and promote use of the canal and its banks for interpretation and recreational purposes, taking into account the need to maintain recreational navigation.

THEMES AND OBJECTIVES

The development of the Chambly Canal will be based on the following themes and objectives:

Themes

The Richelieu River was canalized in the 19th century in response to economic imperatives. Indeed, the proximity of the United States and trade links between the two countries gave rise to considerable economic competition. Early in the 19th century, the project to construct the Erie and Champlain Canals posed a serious threat to the Canadian colony.

Located as they were at the centre of a crucial economic asset, the Chambly and St. Ours Canals allowed the Canadian colony to take advantage of the complementary nature of trade in resources between the two neighbouring countries. Competition from the railways and the early obsolescence of the Chambly Canal, however, would alter the economic importance of the canals along the Richelieu.

In this context, the interpretation theme will help highlight the economic rivalries which attended the building of these canals, the international aspect of the trade carried out there and the technological rivalries which contributed to their decline.

The general theme for the canals along the Richelieu[5] is:

"Canals along the Richelieu: economic strategy and role in development of international trade."

4. Parks Canada Policy, 1979

5. Source: *Themes et objectifs, canaux historiques du Quebec, (Quebec heritage canals: themes and objectives)*, 1979

▲
Towing boats on the Chambly Canal, 1919, P.A.C.

This theme is built around the following secondary themes:

- trade links: economic importance of the river and impact of the canals on international trade;
- technological development: technological contributions that have marked navigation on the Richelieu River;
- natural environment: nature and scope of obstacles to navigation;
- modern recreational corridor: evolution of the Richelieu Valley's role.

At the Chambly Canal, this general theme will be developed so as to emphasize the physical features of the canal and its specific role in Canada's history; several aspects of this theme will thus be stressed,[6] namely:

- transportation of lumber and international trade;
- canal system and development of its operating technology.

Objectives

The overall objective which the Canadian Parks Service intends to pursue at the Chambly Canal is to consolidate the heritage and recreational role of the site in order to develop a public activity corridor between Chambly and St. Jean. Thus, while ensuring that recreational navigation is maintained, the development of the canal should promote:

- preservation of the historical and natural heritage;
- public awareness and appreciation of the various heritage features that make the canal of national significance;
- public access to sites with potential for recreation and historical and nature interpretation;
- integration of facilities and complementary nature of activities and services on the federal Chambly Canal property and adjacent public land.

6. Source: *Orientation thématique, canaux historiques, (Quebec heritage canals: thematic approach)*, 1981.

1.1 HISTORICAL BACKGROUND

The Richelieu River is one of Canada's navigable waterways that played a decisive role in the country's economic development. Indeed, more than three centuries of history illustrate the importance of this river as a transportation and trade route and attest to its international role.

In the 17th century, the French and the Iroquois faced off from both ends of the Richelieu. Then the French and the English did likewise until 1760. Soon after the Conquest, it was the English and the American colonists who attacked each other along this corridor, trampling an invisible border that was uncertain and inoperative, but most real in its international function.

In 1783, though, the Treaty of Versailles put an end not only to the Anglo-American hostilities but also to this border dispute: the 45th parallel placed Vermont within the American's territorial boundaries, along with Lake Champlain. For its part, the Richelieu, albeit cut off from its source, lay entirely within Canada, a fact which did not prevent it from once again becoming a scene of international conflict in the War of 1812.

The violent confrontations between inhabitants established on either side of Lake Champlain thus lasted close to two centuries and forged the international image of the Richelieu early on.

This river route was also the historical theatre of an international reality that was both longer-lasting and more important, in several respects, than armed conflict: trade. Thus, New France used this river to lay its hands on the exceptional lumber supply around the perimeter of Lake Champlain. After 1760, the Vermont colonists also used this route both for supplies and as a vital outlet for their natural resources, such as rough-hewn pine and oak, potassium and barrel staves. Now the Richelieu's trade era had well and truly begun on an international scale.

Trade was so important that it transcended conflicts. During the American War of Independence, not only did the inhabitants of Vermont keep on trading with Canada, but to do so, they even considered leaving the New England colonists' fold. In the early 1800s, during the Napoleonic Wars, the great rafts loaded with wood from Lake Champlain never stopped floating down the ancient river of the Iroquois, despite the prohibitions and embargoes decreed by the American President, Jefferson; in fact, between 1806 and 1812, more than half the oak and pine shipped from Quebec City to London came from Vermont. This "contraband" had nothing to fear, not even Customs. During this time, Canada exported furs, fish, salt and such.

The growing pressure thus exerted to canalize the Richelieu clearly illustrates the economic importance already attached to the river. Although unofficially an American state since 1783, when the boundary was drawn between the two countries, Vermont none the less attempted to negotiate a free-trade arrangement with Canada, which remained as important an outlet as ever for its products. It was also hoped that the Governor of Canada would sanction the canalization of the Richelieu in order, naturally, to provide navigation without hindrance between the St. Lawrence and Lake Champlain. Requests of this nature were made in 1785, 1787 and 1796.

Traders in Montreal, Burlington and Albany, aware of the economic potential of this route, backed these initiatives with growing insistence as the situation became increasingly urgent. Since 1794, on the one hand, the Jay-G-renville Treaty had opened

the Canada-U.S. border wide to trade between the two countries, while on the other hand, since 1792, the Americans, no doubt in anticipation of this favourable situation, had launched two canal projects which, if completed, promised to divert a high proportion of Canadian trade away from the St. Lawrence. Indeed, the Erie Canal would link the Hudson River with Lake Ontario, while the Champlain Canal, by linking Lake Champlain with the Hudson, would give Vermont direct access to the vast market of the Hudson and the port of New York. The international Richelieu route was in danger; only immediate, appropriate decisions could preserve its trade role.

American trade strategy, in the New York State sector, was both simple and aggressive; it involved short-circuiting shipping using the St. Lawrence River by draining trade toward the Hudson Valley; the future Erie and Champlain Canals would act as funnels for this purpose. A Canadian economic strategy reflecting the ever growing trade with the United States was urgently needed. So why was such a strategy not developed?

The War of 1812 profoundly changed the government's financial and strategic priorities, as well as its idea on canal-building; the Ottawa River canals, including the Rideau Canal, were built first, because of their logistic value. But, immediately following the Peace of 1815, Canada decided to take action in the Great Lakes to counter the effects of the Erie Canal. But the latter was opened to traffic as early as 1825, whereas the Welland Canal, Canada's answer, was almost 10 years behind. This delay was all the more harmful since the Americans were no longer content to send raw materials to Canada; since the start of the century, they were increasingly flooding the Laurentian market with their manufactured goods.

Now Canada could have used another Welland Canal on the Richelieu, particularly with the opening of the Champlain Canal in 1823! Indeed, since that time, trade between the St. Lawrence and Vermont had fallen drastically. Now lumber from Lake Champlain headed for New York City on barges specially designed for inland navigation. While it is true that a project to canalize the Richelieu had been under way since 1818, this was sponsored and financed by the government of Lower Canada and stumbled over the years on numerous obstacles: insufficient funding and technical expertise, veto from the military, who feared the development of an invasion route, and political troubles (1837-1839). It was only in 1843 that the Chambly Canal officially opened to trade, thanks to technical and financial support from the Union government (1840-1841). Six years later, the St. Ours Lock, built 52 km downstream from Chambly, was in some way to complete the canalization of the river.

Since about 1835, the forests surrounding Lake Champlain had been wiped out in commercial terms, and Canada suddenly became a major source of lumber: this was to become the mainstay of Canada's international trade via the Richelieu. Until the present century, lumber from the Ottawa Valley and later the St. Maurice Valley, in many forms, would account for most Canadian exports to New York, with American coal to some extent restoring the balance of trade between the two neighbours.

In economic terms, the canalization of the Richelieu made it possible to operate traffic as effectively as possible, and more economically, thus ensuring the profitability of Canada's lumber industry.

Chambly quay at the canal entrance, 1894, P.A.C.

A barge loaded with pulpwood enters the canal in Chambly, 1911, P.A.C.

◀

In technological terms, the Chambly Canal is 19 km long, with nine locks 37 metres long and 7 metres wide; the depth of water at the thresholds of these locks is about 2 metres. These dimensions were suitable for boats plying the St. Lawrence River when the idea of canalizing the river was first put forward. In 1840, though, the sail barges or small schooners of the early 1800s had already given way to ever larger steam craft several decades before.

At the same time, the railways had reared their heads in the region in 1836, and St. Jean, the important southern terminus of the Chambly Canal, was linked by rail with Laprairie, the gateway to Montreal. Competition from the railways would be really felt in the early 1850s, when the rail network branched out, crossing the U.S. border at several points. Speed, economy, regularity, safety and convenience, these were all strong points of the train — and in each case the train held the advantage over barges travelling through the Richelieu locks.

As far as the Chambly and St. Ours Canals are concerned, the Canadian government's trade strategy was basically to make the best possible use of existing facilities between Chambly and St. Jean. There was no talk question, then, of enlarging the locks; the short-lived plans for a canal between St. Jean and Caughnawaga during the 1850s had led to additional delays which could not now be made up, and only repairs were carried out during the 1860s. The major economic crisis of 1873-1878, followed by the crisis of 1883-1885, helped put an end to the dreams of those who wanted to make the Richelieu a great international inland waterway.

Repair work on lock 1, circa 1860.

▼

In fact, what purpose would the enlargement of the Chambly Canal have served when the canal's role was obviously to carry lumber to the Hudson River? For this lumber was conveyed on barges which, generally speaking, were able to travel the Chambly Canal without difficulty. This canal was thus seen as a trade route for American and Canadian barges.

But there was a necessary precondition if this plan and this objective were to become reality: steam craft towing these lumber or coal barges had to be able to reach Chambly and St. Jean, at either end of the canal. While this presented no problem to the south, to the north navigation in the Sorel-Chambly sector was marked by some major obstacles. Now the St. Ours Lock, built barely six years after the completion of the Chambly Canal, offered larger dimensions: 61 metres long, 13.7 metres wide, with a depth of water at the threshold of 2.1 metres. Large enough to accommodate steam craft, the St. Ours Lock thus made it possible to complete a barge canal on the Richelieu.

Despite the political, economic and technological situation in the mid-19th century, the Chambly and St. Ours Canals thus served international trade to their best of their ability.

Lock 7, view towards the north. In the background, bridge 2 and locks 4, 5 and 6.

1.2 REGIONAL FRAMEWORK

Some 25 kilometres southeast of Montreal, the Chambly Canal lies in the heart of the Richelieu Valley, whose recreational/tourism and cultural role is based largely on the scope and variety of its natural and heritage attractions.

In fact, the Richelieu Valley is a tourist region distinguished by scenery typical of an agricultural region with highly fertile soil; indeed, the variety of crops developed there has often earned it the title of "Garden of Quebec". Added to this pastoral landscape is the historical interest elicited by frequent reminders of the past associated with this region's different periods of occupation.

Located near Quebec's most highly populated area, Montreal, including the high-density residential areas of the South Shore of the St. Lawrence, the Chambly Canal is a special heritage and recreational corridor within the Richelieu Valley.

In historical terms, the Chambly Canal is one of the many reminders of the strategic role formerly played by the Richelieu as a transportation route, and thus it cannot be dissociated from the St. Ours Lock and Forts Chambly, St. Jean and Lennox, canal and fortification works which were undertaken in the past for the same purpose: to ensure control over the Richelieu River route. At the same time, adjacent to the canal, Canada's first railway station, in St. Jean, and the site of the country's first railway line, between Laprairie and St. Jean, recall the latter town's role in the 19th century as an intersection for river and land transportation along the Richelieu.

On the recreational front, this region is highly sought after for its outdoor leisure space, and numerous facilities are already available to the public. Among the most important are marinas, parks and green spaces, golf courses and campgrounds. Few facilities are presently accessible to bicycle touring fans, although the region is well-suited for bicycle rides; but there are many existing routes, often running along the water.

The Chambly Canal is also one of the Richelieu Valley's main recreational facilities; with the St. Ours Lock, it already fulfils an essential function for pleasure-boating, thus helping to maintain the international role of the Richelieu River-Lake Champlain route linking the Atlantic with the Great Lakes.

The corridor of the canal and its banks is therefore expected to play a decisive role in the establishment of tours (car, walking, bicycle and water tours) which lend themselves to the discovery of this region's landscapes. Indeed, these landscapes are the core of the Richelieu Valley's attraction for tourism. The numerous historical and cultural features offered by this region none the less contribute to enriching visitors' tourism experience.

The tourism development plan for the Montérégie confirms that the role of this subregion of the Richelieu Valley is to be the destination for a clientele consisting primarily of day trippers seeking rest and relaxation. Outdoor activities and tours are thus considered the activities to be promoted in the region.[7]

The many organizations working to develop a tourism product stress the importance of co-operation among the various local organizations. Whether it be in terms of planning diagrams, municipal projects and development or action plans on the development of the river and its banks, water-based activity and vacation trips are among the main attractions and suggest development based on enjoyment of the values of the landscape within a heritage context.

In economic terms, a large number of jobs are owed directly and indirectly to the operation of the canal and the maintenance of recreational navigation on the river. This semi-skilled manpower comes entirely from the immediate region and contributes to the expansion and economic vitality of the surrounding area.

From a regional perspective, the Chambly Canal cannot thus be seen as an independent entity; it is one of the many bases for tourism development in the Richelieu Valley. Its development will add to the varied and complementary nature of the public areas and activities within this region.

7. **Montérégie regional tourism association, *Montérégie tourism development plan*, CEGIR, 1987**

2.1 SITE

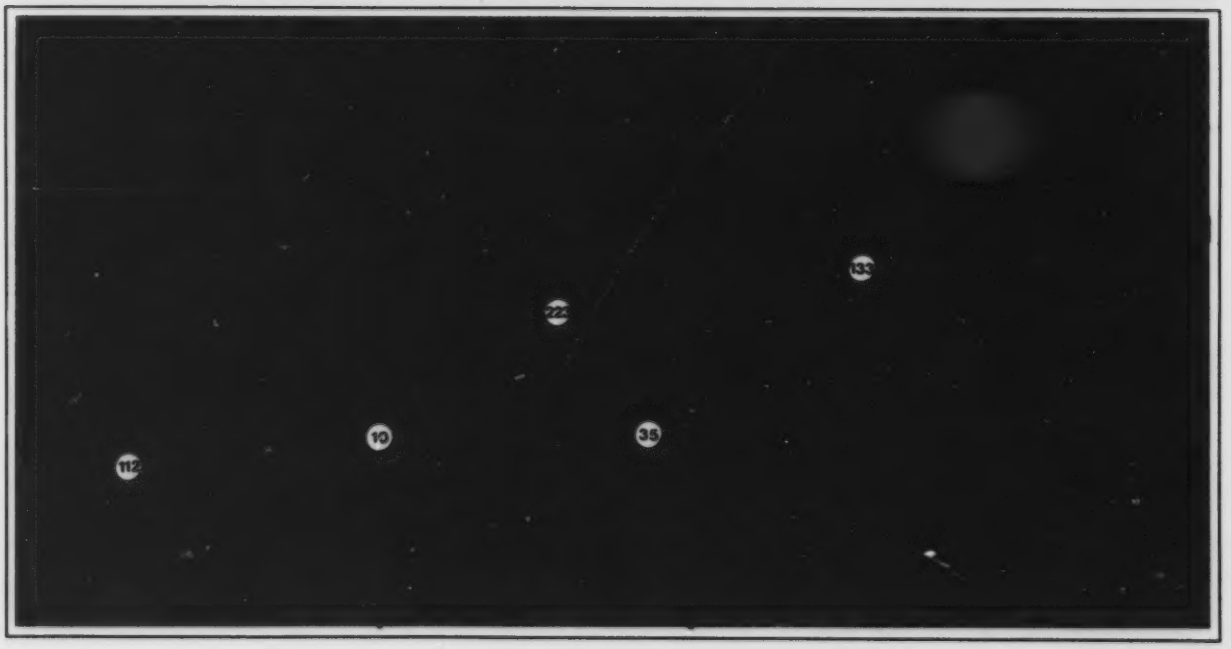
The Chambly Canal property extends almost 20 kilometres along the west bank of the Richelieu River. From north to south, it passes through Chambly, Carignan, St. Luc and St. Jean.

The layout of this property is unusual: it is essentially linear, consisting of a narrow strip of land on either side of the canal, widening out occasionally into areas of varying size. In the immediate vicinity of the canal, the only land not under Canadian Parks Service jurisdiction is the northern part of Fryer Island and a section of the west bank of the canal opposite St. Thérèse Island.

Along the canal property, several leases or land use permits have been granted to municipalities, businesses or individuals; in a number of cases, these agreements legalized situations of encroachment or occupation of premises for public or private purposes. In addition, in light of the talks which have been going on for several years concerning the possible transfer to the town of St. Jean of part of the land at the southern entrance to the canal, some changes in property titles in this sector may be expected.

The Chambly Canal corridor lies in an environment whose agricultural role is in decline, giving way to urban uses, especially on the edge of towns and along highways. The special features of the successive urban, semi-urban and rural environments along the corridor are reflected in the variety of the different landscapes and contribute to the site's atmosphere.

LOCATION



2.2 NATURAL FEATURES

The Chambly Canal is located in a setting where geological, topographical and hydrological conditions presented serious difficulties for inland navigation on the Richelieu River. Between Chambly Basin and the town of St. Jean, the river channel was marked by a series of rapids: the Chambly, Fryer, Mille Roches and St. Jean rapids. Today, the presence of these rapids is a panoramic natural attraction along the river corridor. Indeed, given the few bio-physical resources of interest along the canal, the Richelieu River may be considered the most significant natural feature in this sector.

2.2.1 Landform

The landform of the region through which the canal passes is extremely flat, the only major breaks in its horizontal aspect being the Monteregian Hills.

2.2.2 Climate

In climatic terms, the Chambly Canal is in Quebec's warmest region, the Montreal area. This region has the province's highest insolation and largest number of growing degree-days.

2.2.3 Vegetation

The canal environment today offers a highly disturbed natural environment; its flora is typical of disturbed soils, colonized by grasses, while the forest cover has almost completely disappeared.

Fryer Island is the only area of any size along the canal that has retained a natural atmosphere. But this is also a disturbed environment and, with the exception of the periphery of the island, there are virtually no traces left of the original plant cover. The open fields which comprise most of the surface area of Fryer Island are abundantly colonized by grasses, while around the edge of the island the plantlife is characteristic of wetlands, with a maple grove including silver maple, a red ash grove and a stand of white elm mixed with swamp white oak.

2.2.4 Aquatic environment

The aquatic environment is also disturbed. The waters of the Richelieu River and the Chambly Canal are considered to have deteriorated. This pollution comes from several sources: towns which do not treat their effluent, industries channelling their liquid wastes directly into the river, chemical fertilizers draining from farmland, and finally shoreline users and water-based activities.

The fish population of the Richelieu is also less diversified in the Chambly Canal sector than above St. Jean. There are, however, about 20 species of fish, brown bullhead and perch being the most abundant in the river, and pumpkinseed (sunfish) and rock bass the most abundant in the canal.

2.3 HERITAGE FEATURES

Despite the effect of time and some alterations made since the canal opened in 1843, most of the structures have retained their old appearance, and this gives the canal a special cachet. In addition, the presence of lockmasters and bridge keepers using traditional means to operate the canal contributes to on-site animation and adds to the canal's specifically historical interest.

2.3.1 Locks[8]

The Chambly Canal has nine rather small locks (from 36.73 to 38.4 metres long by 6.97 to 7.42 metres wide); eight of them are in the Chambly sector, while the ninth is in St. Jean. These locks were rebuilt in the late 19th century, but their original dimensions were not changed; as most of them have retained the major architectural features of the day and are still hand-operated, they may be seen as quite remarkable evidence of 19th-century marine transportation technology. This (1880-1895) was therefore the period used as a reference for the conservation and restoration work undertaken by the Canadian Parks Service (Parks Canada) since this agency took over responsibility for the canal.

The present condition of the locks on the Chambly Canal is thus much as it was in 1880-1895, when a new construction technique, considered original and unique, was perfected: the walls were half wood, half masonry. This meant that thick beams covered the lower part of the walls, up to the water level, while the upper part was built of stone. The original wooden bottom has, however, been replaced with a concrete floor. At the same time, the wooden handles used to activate the lock gates were replaced early in the 20th century with a new crank device; this type of mechanism is still to be found on eight of the canal's nine locks.

8. See attached technical data sheet

Locks 1, 2 and 3 in Chambly, 1904, P.A.C.

Locks 1, 2 and 3 in Chambly, 1911, P.A.C.

Locks 1, 2 and 3 in Chambly, 1943, P.A.C.

Locks 1, 2 and 3 in Chambly, 1982.

Today, four of the canal's locks (1, 2, 3 and 4) have not been altered since they were built. The operating mechanisms of the sluice gates on locks 1, 2 and 3 were, however, electrified in 1969-1970.

The structures of lock 8 have been partially rebuilt and restored, while the walls of locks 5, 6 and 7 have been completely restored. But these four locks have retained their manual operating mechanisms. Lock 9, for its part, has had its structures partially rebuilt (west wall) and its operating mechanisms totally electrified. In addition, locks 4 and 9 have recently had temporary stabilization work carried out on them.

2.3.2 Bridges

A dozen movable bridges cross the canal and, of all these structures, only the CN and CP railway bridges and road bridge 12 (Gouin bridge) are outside Canadian Parks Service jurisdiction.

With the exception of bridge 1, which was rebuilt during the 1970s, and the new bridge 10, built in 1986 to replace the old structure, the bridges on the Chambly Canal have kept their original turn-of-the-century structure. But except for bridges 4 and 5, which are still hand-operated, the operating mechanisms have been electrified.

Bridges 6 and 8 were removed in 1968 and 1973 respectively, since they were considered surplus to requirements, while bridge 2 was closed to road traffic following construction of the new high-level bridge above lock 7. In addition, bridge 9, built on the Lachine Canal in the late 19th century, was installed on the Chambly Canal in 1923 after being shortened by 16 feet. This bridge was reinforced in 1988.

The amount of traffic using the heritage bridges across the canal varies according to their location and their respective functions.

- Bridges 1, 7 and 12 carry a lot of traffic, since they lie on major arteries;
- Bridges 9 and 10 have been carrying more and more traffic in recent years because of the urban development of St. Thérèse and St. Marie Islands;
- Bridges 3, 4 and 5 carry relatively little traffic;
- Bridge 2 and former bridge 10 are no longer operational and lie on the canal bank.

2.3.3 Lock houses and bridge keeper's cabins

The lock houses and bridge keeper's cabins are facilities associated with the canal structures and linked to their operation. Largely located on the west bank of the canal, these buildings are notable features of the canal's architectural landscape. Eight of them look the way they did at the turn of the century.

Indeed, that was when the lock houses were replaced with new buildings in the Neo-Queen Anne style. This type of lock house is still to be seen today at locks 7 and 8, as well as near locks 1, 2 and 3. The two old lock houses from locks 1, 2 and 3 are kept here; sold to the Chambly Sailing Club by the federal Department of Transport under the program to modernize canal facilities initiated in 1967, they were recently bought back by the Canadian Parks Service in order to ensure their preservation.

The old wooden lock house from lock 9 and those from locks 1, 2 and 3 were replaced in the late 1960s with modern masonry buildings. The lock houses at locks 4, 5 and 6 were replaced in the late 1960s with by new bungalow-type buildings, as were the bridge keeper's cabins at bridges 9, 10 and 12.

The turn-of-the century lock keeper's cabins at bridges 2, 4, 5 and 7 are still in place, though. The sober architecture of these buildings stands out, however, from that of the old lock houses because of their total lack of any decorative feature whatsoever. The two old lock houses from locks 1, 2 and 3, the lock houses at locks 7 and 8, as well as the bridge keeper's cabins at bridges 2 and 5 have been recommended for preservation by the Historic Sites and Monuments Board of Canada.

2.3.4 Old canal superintendent's house

This building is in Chambly, on the west bank of the canal near locks 1, 2 and 3. The house was built in 1867, and its mansard roof was added in 1892-1893, when it was being used as an office for the superintendent and the canal dues collector. In 1914, it was enlarged and converted into a residence for the canal superintendent. Until recently, this building was used as the home of the Director of the Montreal District.

In 1988, this house was "recognized" as having heritage value by the Federal Heritage Buildings Review Office.

2.3.5 Canal channel and banks

Since it was first built, the Chambly Canal has largely retained its original route, draft (1.98 m) and width (18.29 m). The main changes made to the banks were the appearance of gabions, the disappearance of vegetation and the widening of the canal in certain sectors. In fact, during the 1960s, the federal Department of Transport widened certain sections of the canal, in particular between bridge 5 and Fryer Island and, in the St. Jean sector, between St. Hubert and St. Paul Streets. On Fryer Island, excavation work was also carried out in order to link the canal and the river.

This work was the first phase of a program aimed at creating a new navigation route which would be based on the combined use of the Chambly Canal and the Richelieu River.

The purpose of these changes was to improve canal operations by increasing the capacity of the canal and reducing the time required to travel between Chambly and St. Jean. However, this project was discarded and the modifications begun were not followed through.

For their part, the canal banks looked much the same way until the 1960s, when they were lined with stones and dry stone walls were added, particularly along the embankment on the river side. Natural vegetation and plantings also abounded there. But over the years, and with the increase in pleasure-boating, the canal banks have been severely attacked by erosion. Despite the various rip-rap projects, erosion carries on its work in the most vulnerable sectors, and the loosened material accumulates in the canal, thus reducing the width of the prism, and the draft required for navigation. At the same time,

the variety of materials used to stabilize the banks hardly improves the look of the canal. And the proliferation of private docks, installed haphazardly between bridges 9 and 10, also contributes to the visual degradation of the landscape. St. Thérèse Island, better known as « Petit Lac », is in fact the main sector along the Chambly Canal where there is private property immediately adjacent to the waterway.

As for the old towpath, it runs along the east bank of the canal from Chambly to St. Jean. Originally, this path was of hard-packed earth; it was covered with gravel in the late 19th century and, as navigation has developed, it has gradually turned into a service road and, for the past few years, it has been open to cyclists and pedestrians. But that part of the old towpath lying on St. Thérèse Island is now used for automobiles by Island residents.

The old towpath "between two streams" in St. Jean.

2.3.6 Fryer dam

In 1937, the International Joint Commission, established under the Boundary Waters Treaty of 1909 between Canada and the United States, approved the construction and operation of regulation works on the Richelieu to prevent flooding of the land around Lake Champlain and along the river.

Following this approval, the Canadian government built a control dam in 1938-1939 level with Fryer Island. Construction of this dam was supposed to make it possible to alter the course of the Chambly Canal and thus facilitate navigation on the Richelieu; but this project was also to be tied to the removal of shoals opposite St. Jean, and the installation of protective embankments on the east bank of the river between the dam and the town of Iberville. As this work was never completed, Fryer dam has remained inoperative since it was built. This structure was declared surplus property by the Canadian Parks Service in 1986 and its future is currently under discussion with the Treasury Board.

2.4 FACILITIES AND SERVICES

Most of the facilities and services presently available at the Chambly Canal are primarily intended for pleasure-boaters. But some effort has been made in recent years to provide land-based visitors with a minimum of facilities and services.

2.4.1 Water corridor

The Chambly Canal is equipped with a buoy and signage system which enables pleasure-boaters to sail along the canal in complete safety. The entrance and exit control stations and information services for pleasure-boaters are located at either end of the canal, at locks 1, 2 and 3 in Chambly and lock 9 in St. Jean.

Approach wharves are available to pleasure-boaters above and/or below most locks and movable bridges. In Chambly and St. Jean, landing wharves also facilitate access to the dock for anyone wishing to make short stops.

In high season, a team of seven lockmasters, nine canalmen and five bridgemen is responsible for operating the canal and ensuring that boats sail through it safely. The canalmen also have an important role to play with respect to information services. Indeed, through their contact with pleasure-boaters and the assistance they give them during manoeuvres, the canalmen willingly become special "information officers" for the water-based clientele.

2.4.2 Land corridor

There is comparatively little in the way of existing infrastructure and services along the banks of the canal, and what there is lies primarily at either end, at Chambly and St. Jean.

There are parking lots at locks 1, 2 and 3 in Chambly (15 cars) and lock 9 in St. Jean (5 cars).

In addition, the lock houses at both these lock stations have visitor reception and information counters and public washrooms. Picnic tables are located mainly at lock 9 and on the mole at the St. Jean canal entrance, although there are several at the different lock stations and at bridge 7, where a parking lot with space for some 10 vehicles has been built.

Explanatory signs and a thematic interpretation module have been installed near locks 1, 2 and 3 in Chambly. In this sector, interpretation guides also offer visitors a number of interpretation activities. In addition, although the old towpath has no facilities or services of any kind, it has been used for several years by cyclists and pedestrians seeking access to the canal banks.

During the winter months, skating rinks are set up on the canal, in St. Jean, St. Luc and Chambly, and these facilities are run by the municipalities concerned.

A number of administrative facilities have also been established on the canal property in the Chambly sector, associated with the operation and maintenance of Montreal District parks and heritage canals. These consist basically of a series of buildings on the east bank of the canal, between bridge 1 and lock 4. This complex houses offices, production and repair workshops (carpentry, mechanical, electrical, etc.) and storage space for miscellaneous equipment and facilities.

A service road also runs along the west bank of the canal, in the Chambly sector, from Migneault Street to bridge 7. This road provides access to locks 4 to 8 as well as serving a number of

private residences. Talks with the municipality of Chambly will have to be held in order to determine how to manage this road most efficiently while respecting the best interests of both parties.

Also, under agreements, Chambly Canal facilities are occasionally made available to municipalities or organizations for special activities (festivals, marathons, etc.).

2.5 VISITORS

The Chambly Canal was long used almost exclusively by pleasure-boaters. But over the years a number of activities were introduced on the banks of the canal, and land-based visitors now make up the majority of visitors to the site.

2.5.1 Water-based clientele

The Chambly Canal operates for five months of the year, from mid-May to mid-October, and is used mainly by boaters on their way through the canal. Full transit time is about 3½ hours, due to the following:

- low speed (10 km/h) within the reaches of the canal;
- there are nine locks to be passed through, each taking 15-20 minutes, as well as a dozen movable bridges;
- the small size of the locks.

Despite this time constraint, many pleasure craft use the Chambly Canal within the Quebec heritage canals network. The number of pleasure boats using the canal grew from 1974 to 1978, remained quite steady until 1984 and has grown somewhat since then; over the past two years, pleasure craft traffic has reached 15-year highs. Moreover, there has been an increase in the size of the pleasure craft and their motors, factors which will likely have an impact on the flow of boat traffic as well as the quality of the environment.

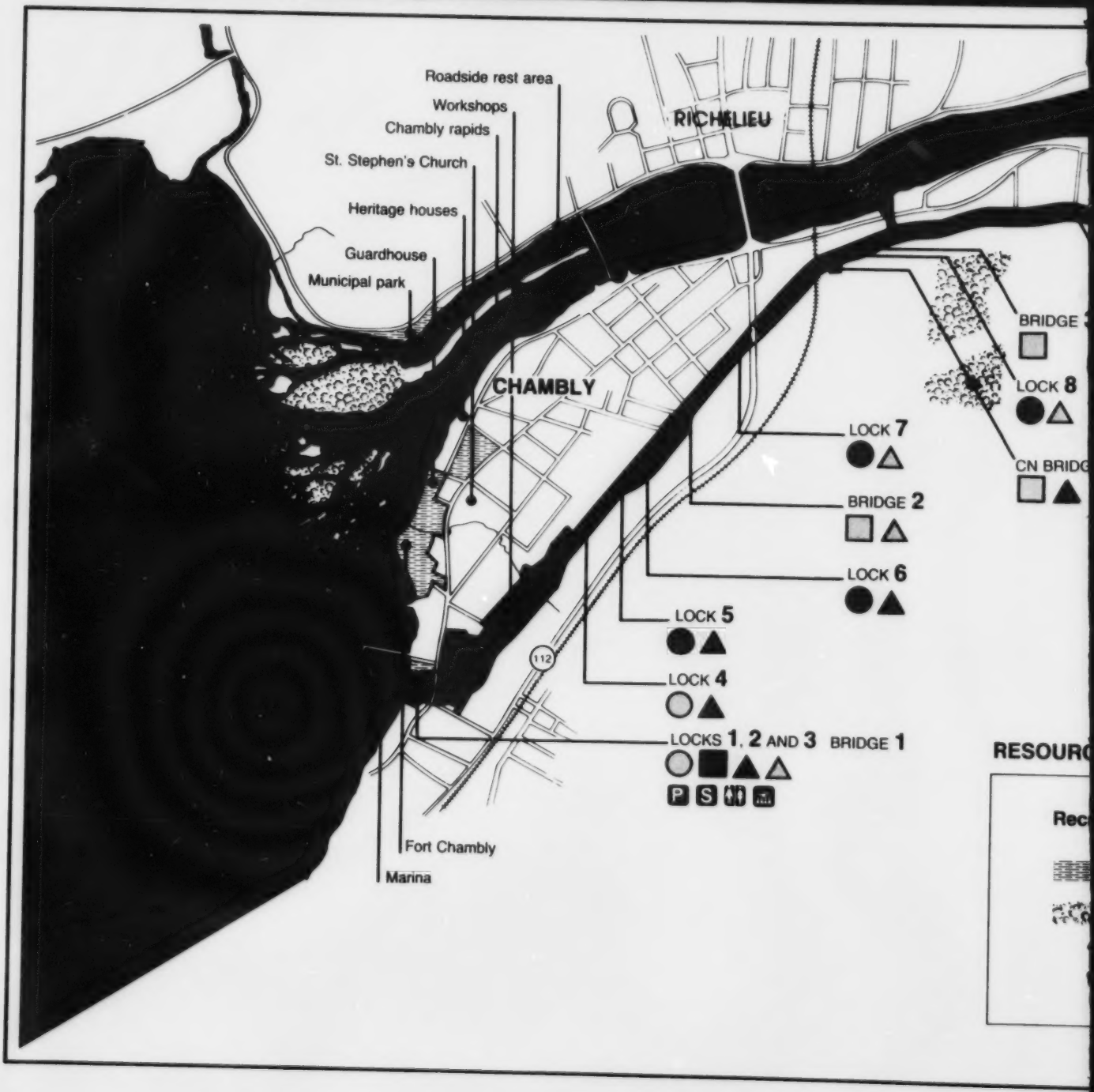
In 1988, the number of boats registered at either end of the canal, in Chambly and St. Jean, was 4,175 and 4,543 respectively.

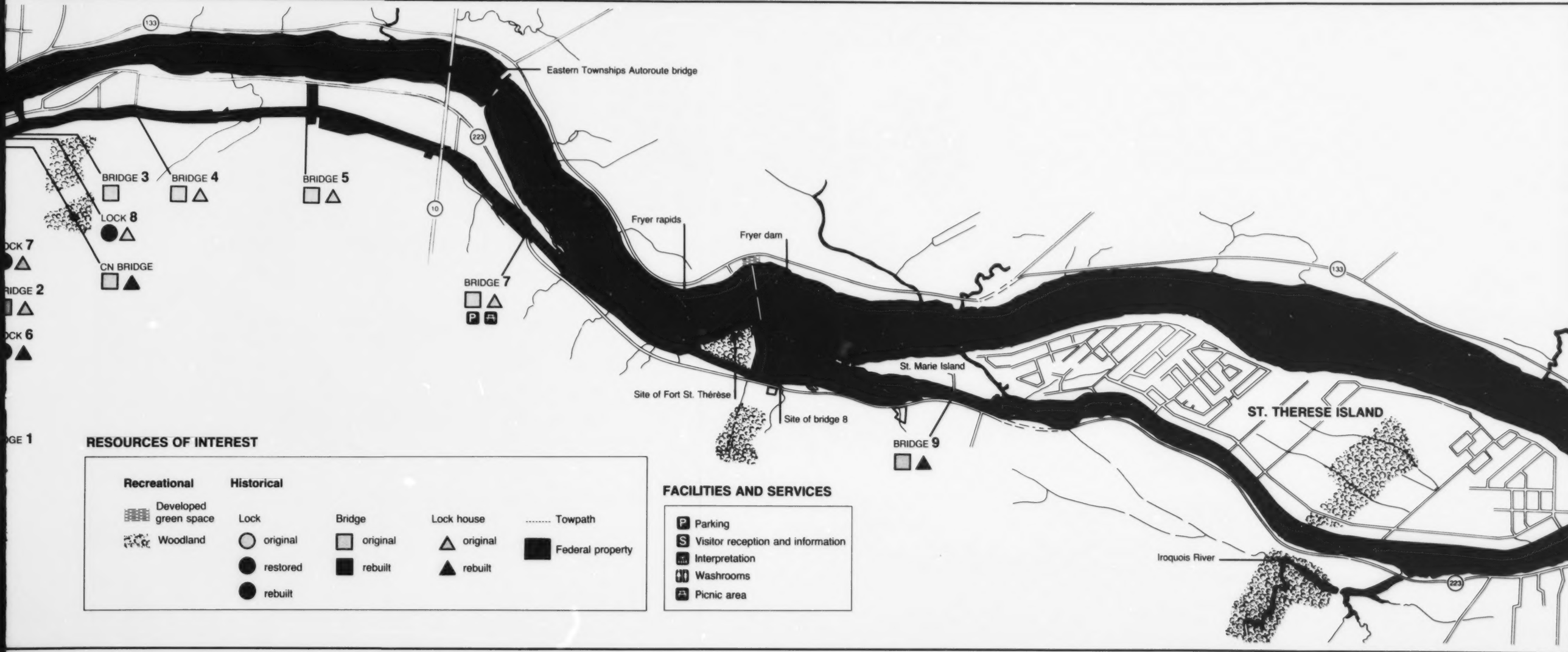
So, using the realistic assumption that boats counted in Chambly are also counted in St. Jean, the total number of boats passing through the Chambly Canal on different trips may be estimated at 4,400. Expressed in terms of pleasure-boaters, the water-based clientele, that is, the total number of people observed on board boats during these 4,400 crossings, was 13,900 in 1988.

Lock 8 during a peak period, 1975.

The canal is particularly busy in July, when it receives almost 50% of its visitors. In addition, no doubt owing to the proximity of the International Border, the Chambly Canal attracts more foreign boats than the other canals in Quebec; foreign visitors account for some 8% of its traffic, compared with 3% for the Quebec canal network as a whole. An in-depth study of this clientele and of the foreseeable potential market over the next few years will help determine the tourist demands on the canal in terms of its socio-demographic profile, type of journey and trip, and expectations and needs with respect to visitor reception, rest and interpretation services.

PRESENT SITUATION





RESOURCES OF INTEREST

Recreational

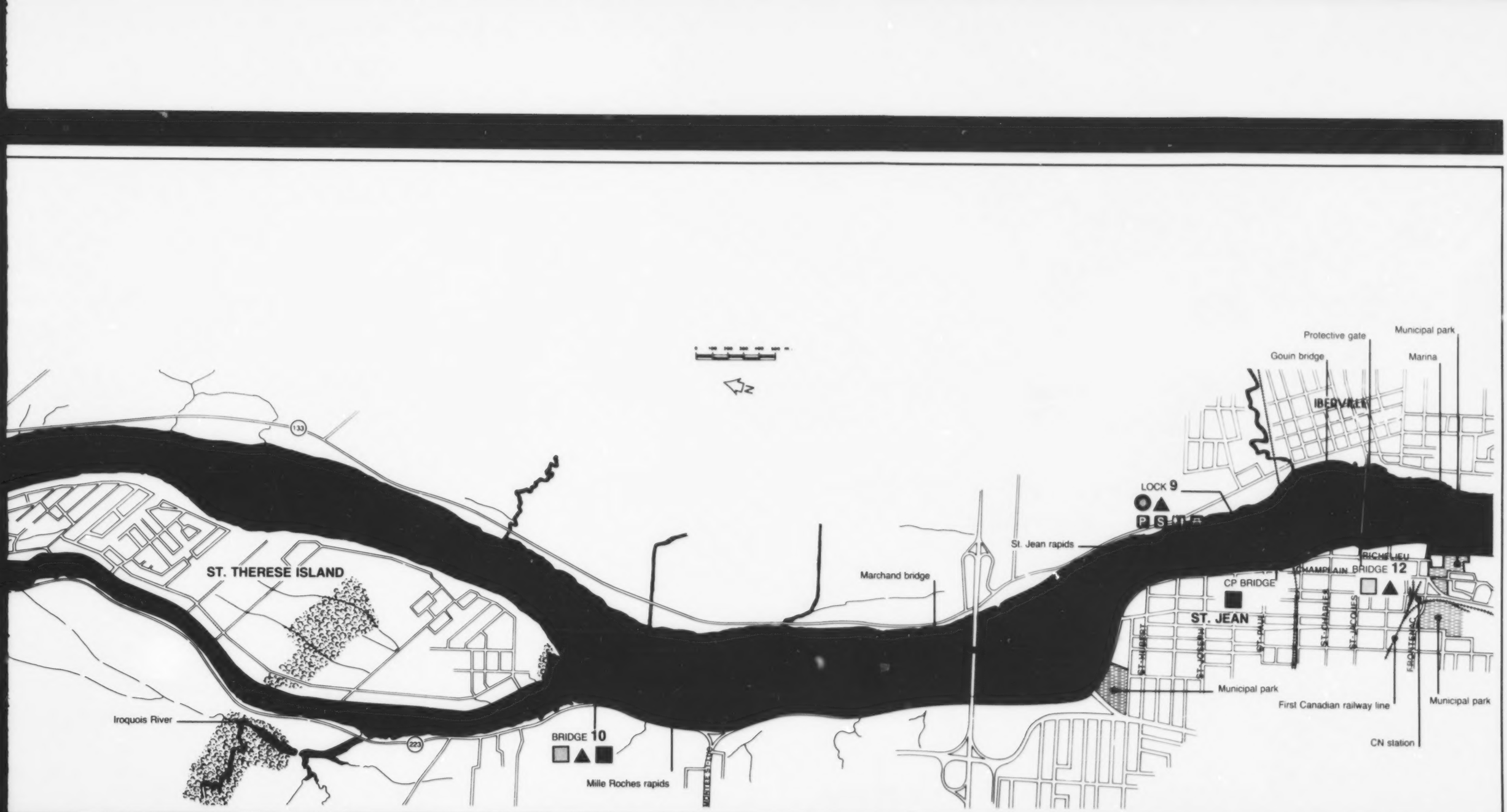
- Developed green space
- Woodland

Historical

Lock	Bridge	Lock house	
○ original	□ original	△ original	..... Towpath
● restored	■ rebuilt	▲ rebuilt	■ Federal property
● rebuilt			

FACILITIES AND SERVICES

- P Parking
- S Visitor reception and information
- Interpretation
- Washrooms
- Picnic area


133
223
ST. THERESE ISLAND
Iroquois River
BRIDGE 10
Mille Roches rapids
Marchand bridge
St. Jean rapids
LOCK 9
Protective gate
Municipal park
Gouin bridge
Marina
IBERVILLE
CP BRIDGE
ST. JEAN
CHAMPLAIN BRIDGE 12
RICHELIEU
ST-JACQUES
ST-CHARLES
ST-JOHN
ST-JOSEPH
ST-HUBERT
FRONTENAC
Municipal park
First Canadian railway line
Municipal park
CN station

Cyclists already using the old towpath.

2.5.2 Land-based clientele

Although facilities and services have favoured the water-based clientele to date, the Chambly Canal is very popular with land-based clients. In fact, during the last summer season, from mid-May to mid-October 1988, an estimated 43,950 people visited locks 1, 2 and 3 in Chambly, more than 6,400 visited the bridge 7 rest area, and some 53,100 people visited the lock 9 rest area in St. Jean; in addition to these visits on foot, 8,600 cyclists were counted along the banks of the canal at lock 4, with 30,250 at lock 9 in St. Jean.

In order of importance, the main activities carried out by visitors are watching the boats and lock operations, cycling, short hikes, picnicking and fishing, especially in St. Jean. The introduction in 1984 of interpretation services in the Chambly sector has highlighted the interest that this type of activity elicits. Thus, although these services are offered only on a very occasional basis, more than 16,000 people in 1988 used the services of interpretation guides posted at locks 1, 2 and 3 in Chambly, while some 4,400 people took part in guided tours in this sector.

It may thus be seen that visitors are very unevenly distributed along the banks of the canal. Indeed, the largest number of visitors are seen at either end of the canal, sectors offering a number of special attractions as well as being easily accessible from a major highway or a town. Thus in Chambly, locks 1, 2 and 3 and, to a lesser extent, locks 4, 5 and 6 are choice sites for observing boats, walking and interpretation activities, while in St. Jean, lock 9, the mole and Place du Quai are particularly popular with walkers, picnickers and anglers.

Between these two ends, the bridge 7 area is visited particularly by motorists wishing to stop alongside the canal, whereas Fryer Island is a popular stopping point with cyclists riding on the towpath.

The fact that an estimated 35,000 or so cyclists ride along the canal banks highlights the strong attraction of the canal for cycling.

The development potential of the Chambly Canal lies primarily in the fact that this public property is suitable, on the one hand, for the creation of a water and land link among the various points of interest along this heritage and recreational corridor and, on the other hand, for the introduction of new types of activities, thus contributing to the socio-cultural and recreational development of one of the tourism components of the Richelieu Valley.

The main problems concerning this development basically stem from land use and environmental quality. Thus, legal barriers (enclaves of private property) or physical barriers (highway infrastructure) are the main constraints to the establishment of land links. In addition, the narrowness of the canal banks, the pollution of the water and the impact of certain forms of peripheral development (industries) are likely to affect the introduction of certain activities.

Of the entire area under study, three sectors, namely Chambly, Fryer Island and St. Jean, particularly attract our attention owing to the strong potential offered by the concentration of their natural, heritage and/or recreational resources.

3.1 CHAMBLY SECTOR

Lying at the northern end of the canal, this sector stretches from Chambly Basin to bridge 7; it has strong potential for historical interpretation and the establishment of complementary recreational facilities.

The Chambly sector, 1979.
▼

SECTORS OF INTEREST

The canal entrance and surrounding area contain numerous features of interest: the old residence of the canal superintendent, Fort Chambly National Historic Park, homes on Richelieu Street, St. Stephen's Church and cemetery, and the Chambly islands, rapids and marina. Along the canal and its banks, the locks, movable bridges, lock houses, bridge keeper's cottages, towpath and green spaces available alongside the water are the main resources suitable for development.

A number of constraints limit the sector's potential, though: the enclave of private property between the fort and the canal restricts traffic between these two points of interest and hampers public access to the banks of Chambly Basin. The municipality of Chambly is conscious of this problem, and its zoning plan (1975, soon to be confirmed by another plan) devotes almost all of the banks of the river and basin to public use. In addition, the concentration of features of interest leads to traffic congestion (pedestrians, automobiles and pleasure craft) at bridge 1 owing to the configuration of the site. The future development of this sector should therefore contribute to improving the situation.

▲
Fryer Island, 1979.

A large stretch of green space washed on one side by the waters of the Richelieu River and on the other by the Chambly Canal, the Fryer rapids, wetland wildlife habitats (reptiles, amphibians and migratory birds) as well as various plant groupings, such are the main features which give the site its natural attraction. The Fryer dam, movable bridge 9, the towpath and the possible presence of remains of Fort St. Thérèse as well as prehistoric remains add a heritage dimension to the natural interest of this sector.

Traffic on and access to Fryer Island present certain problems, though. Since bridge 8 was demolished, the island has been accessible only via the towpath, on the east bank of the canal, and bridge 9, from the west bank. Bridge 9 is also used for access to St. Marie and St. Thérèse Islands.

The northern part of Fryer Island is also a private enclave on the east bank of the canal, and this presently limits the possibilities for a Chambly/St. Jean link via the old towpath.

3.2 FRYER ISLAND SECTOR

Located midway between Chambly and St. Jean, Fryer Island is the only stretch of land of any size to have retained its natural atmosphere and to be of interest for both nature interpretation and recreation.

3.3 ST. JEAN SECTOR

Lying at the southern end of the Chambly Canal, the St. Jean sector stretches from the canal entrance to Montée St. Luc, above St. Thérèse Island. This sector has strong potential for historical interpretation and the introduction of certain types of recreational activities.

The canal entrance and surrounding area contain a series of features of historical and recreational interest: the site and remains of Fort St. Jean, the heritage buildings of the Military

Part of the St. Jean sector from the Gouin bridge to lock 9, 1979.

College and the site of Canada's first railway and first station have development potential, while the St. Jean marina and pleasure-boating and excursions on the Richelieu are already popular with visitors.

Along the canal and its banks, lock 9, the movable bridges, lock houses, bridge keeper's cabins and towpath, the proximity of the Richelieu River and the green spaces available are all features suitable for development.

As is the case in Chambly, there is presently no functional link between the sector's heritage and recreational resources. Heavy motor traffic on Place du Quai and the Gouin bridge as well as the industries clustered in an enclave between the fort, municipal parks and the canal restrict traffic and access as well as having negative visual impact. Moreover, the complexity of traffic and parking-related problems makes it difficult for visitors to have access to the canal banks in the St. Jean sector. Consultation among the various parties involved with respect to the sector's development should contribute to improving the area.

The concept stems from the development potential of the heritage and natural resources and reflects the following factors:

- Canadian Parks Service policy with respect to national heritage canals;
- the significance and importance of the Chambly Canal in the history of Canada's inland waterways;
- the regional context.

It defines the principles and major priorities which the Canadian Parks Service intends to follow for the development of the Chambly Canal property.

At the time of the public consultation program, this concept was well received by the public, which supported the heritage and recreational role identified and the development objectives stated, and stressed the importance for tourism of developing the canal property. Generally speaking, organizations and individuals expressed their satisfaction with the priorities proposed for development of the corridor of the canal and its banks as well as for the development of the different activity areas. The development of a multipurpose path (for bicycles and pedestrians) and its year-round use, the general quality of the environment and the integrated development of the major activity areas were, in all, the main subjects of interest.

4.1 DEVELOPMENT PRINCIPLES

In order to ensure the development of the canal in line with the established objectives and role, a number of basic principles were adopted:

- the historical character of the canal will be retained and its structures developed;
- protective measures will be taken to prevent the degradation of natural resources;
- archaeological resources will be managed in accordance with Canadian Parks Service policy and directives;
- safe service will be provided for water and road traffic between the two banks of the canal;
- interpretation facilities and activities will be established;
- daytime recreational activities and year-round use of the site will be promoted;
- finally, in consultation with the authorities concerned, we will participate in a clean-up program for the canal waters.

4.2 ORGANIZATION OF SPACE

Based on the creation of a linear park, the development of the Chambly Canal property is organized from a water and land activity corridor linking two multi-fonctional areas to which are added development hubs consisting of one secondary area and rest areas at various points along the canal.

DEVELOPMENT CONCEPT

4.2.1 Heritage corridor of the canal and its banks

Pleasure-boating has to date been the main function of the Chambly Canal property, and this type of use of the waterway will be maintained. The preservation and development of the canal's heritage structures and the establishment of new activities on its banks will favour the introduction of a new educational role while helping to consolidate the recreational role of this corridor.

4.2.2 Major activity and service areas

Major activity and service areas will be developed at either end of the canal, one in Chambly and the other in St. Jean. Because of their urban location, their varied features of historical and recreational interest and their accessibility, the Chambly and St. Jean activity areas are the entry points most suitable for receiving the regional and tourist population. The main functions of these activity areas will be visitor reception, historical interpretation and recreation, and they will be used as the main departure points for activities along the canal.

4.2.3 Secondary activity area

The development of a secondary activity area on Fryer Island will provide public access to one of the few sites of natural interest along the Chambly Canal. In view of its location, this activity area will mainly receive visitors en route between Chambly and St. Jean as well as local residents. Focusing on recreation and nature interpretation, the development of Fryer Island will contribute to the varied and complementary nature of activities along the canal while ensuring protection of the area's natural resources.

4.2.4 Rest areas

Some sites of special interest have been identified for the development of rest areas along the canal. Intended for visitors travelling between the Chambly, Fryer Island St. Jean activity areas, these rest areas will be used for rest and recreation and will largely be secondary canal access points.

4.3 GUIDELINES

4.3.1 Navigation

Within the framework of development of the canal, the approach with respect to navigation aims to reconcile the canal's transit role with the protection of the historical heritage. Thus, the navigation corridor will respect the historical integrity of the canal: the current route and heritage locks will be maintained. Everything will be done, though, to meet the requirements of modern use, and the Canadian Parks Service will continue to provide pleasure-boaters with efficient, safe services.

Furthermore, given its strategic location between the St. Lawrence River and Lake Champlain, the Chambly Canal is destined to remain essentially a waterway for through traffic rather than a destination for pleasure-boaters. But the enhancement of points of interest and the development of activities alongside the canal are likely to retain a number of pleasure-boaters wishing to make short stopovers. Efforts will therefore be made in terms of both information services and facilities for access to the canal banks so that the water-based clientele has the opportunity to understand and enjoy the heritage and natural resources which abound between Chambly and St. Jean. A review of the needs of this clientele with respect to interpretation will help guide the programs and the means to be chosen.

Pleasure-boaters will also be able to enjoy the various services offered by private marinas located at either end of the canal, which may be used as home ports for longer stays in the region.

In addition, in the interest of harmony along the waterway, special attention will be paid to the development of the banks (sustaining walls, etc.) and shoreline occupation by private facilities and equipment (docks, gangways, etc.), particularly in the St. Thérèse Island sector (between bridges 9 and 10), which will be the subject of regulations concerning both technical and aesthetic aspects.

4.3.2 Preservation of the heritage canal

The Chambly Canal is a heritage grouping representative of a period in the history of Canada's inland waterways. In fact, it is the only operational component in the network of heritage canals in Quebec to have kept its original route and structures and its late 19th-century operating mechanisms. In this context, it is important to preserve the existing heritage structures and to give back to the canal as a whole a relatively harmonious character so as to highlight its special cachet.

The concept chosen for the development of the canal components takes into account both their heritage value and the requirements relating to their use today. This concept is built around the following central ideas:

- **Canal and its banks:**
  - — preservation of the existing route;
  - — rehabilitation of the canal prism;
  - — stabilization of the banks;
  - — preservation of the towpath and its development for non-motorized traffic.

- **Locks:**
  - — restoration of the walls and rehabilitation of the gates, walkways, etc., of the canal's nine locks to reflect their features and turn-of-the-century building methods;
  - — maintenance of the crank system for hand-operating locks 1 to 8;
  - — maintenance of the existing electrical system for the operation of lock 9.

- **Bridges:**
  - — preservation, in their present positions, of the structures of bridges 1, 2, 3, 4, 5, 7, 9 and 10 (old and new);
  - — use of bridges 1, 3, 4, 5, 7, 9 and 10 (new) for traffic;
  - — preservation of existing (electrical or hand) operating systems for movable bridges.

- **Lock houses and bridge keeper's cabins:**
  - — preservation of existing heritage buildings, namely the lock houses at locks 7 and 8, the two old lock houses at locks 1, 2 and 3 and the bridge keeper's cabins at bridges 2, 4, 5 and 7;
  - — eventual replacement of modern lock houses and bridge keeper's cabins with buildings of turn-of-the-century "Neo-Queen Anne" style.

Lock 8, 1983.

- **Old superintendent's house:**
  - — preservation of this heritage building and its use for canal management and operation purposes;
  - — preservation of the present character of the outdoor space around this property on the west side of locks 1, 2 and 3.

The heritage structures will thus be preserved and restored, while the modern structures required for new functions will be designed and built so as to integrate harmoniously with the historical corridor as a whole.

Proposed work involving alterations to existing structures is envisaged in a perspective of "replacement", on the basis of a program of short, medium and long-term implementation and depending on the technical requirements associated with the operation, maintenance and development of the canal. None the less, these alterations are not restrictive and do not preclude subsequent changes in response to certain imperatives, such as public safety, provided the basic objectives are respected.

4.3.3 Interpretation

The development of an interpretation program is one of the major components of the project to develop the Chambly Canal property. Indeed, it is through this program that the Canadian Parks Service intends to make the national significance of the Chambly Canal known and understood to visitors of all categories (groups, families and individuals), as well as the role played by the canal in the development of inland waterways and international trade.

The use of the canal for navigation and all activities connected with the manual operation of locks and certain bridges is already a form of interpretation; in fact, it is a living commemoration, since the resulting animation is associated with the canal's primary role and is in perfect continuity with the canal's historical development.

▲

The old structures and traditional methods of operating the canal form a good background for setting up an interpretation program.

The approach takes into account both the potential of existing heritage resources vis-à-vis the theme identified and the configuration and use of, and the number of visitors to, the site in relation to the present and foreseeable clientele. Thus, the thematic content and means of communication chosen will be adapted to the presentation site and target clientele. Analysis of the interests and needs of the various existing clienteles will help to identify, on the one hand, potential markets conducive to greater awareness and, on the other hand, ways of reaching these markets. In the medium term, the general profile of the foreseeable clientele at the Chambly Canal should be similar to that of the existing clientele; but they should be both more numerous and more satisfied with the services offered.

The concept chosen includes the creation of activity centres linked by interpretation paths along the navigation route.

- **Creation of activity areas**

Historical interpretation activities will be concentrated at both ends of the canal, in Chambly and St. Jean. In fact, the location of the canal entrances in urban areas, their easy access, current number of visitors and concentration of features of interest are a number of factors likely to attract a numerous, diversified clientele (pleasure-boaters, cyclists, pedestrians, etc.).

These sites will thus be given priority for presenting a succinct introduction to visitors on the overall theme of the history of the Richelieu canals. But, in order to ensure that these two activity areas complement one another, each may develop in greater detail one of the themes specific to the Chambly Canal.

Thus, in Chambly, the technological aspect of the canal will be highlighted, while in St. Jean greater emphasis will be placed on trade. These themes may be presented through small exhibits arranged in indoor spaces so as to ensure a minimum of interpretation services during the entire summer season regardless of weather conditions. These exhibits could eventually be open to the public year-round, depending on demand and the financial resources available.

These exhibits will be complemented by outdoor facilities and activities. In Chambly, these will focus primarily on canal facilities and the operation of restored, hand-operated locks, thus allowing the potential offered by the sector's historical character to be exploited. In St. Jean, outdoor interpretation activities will help highlight the impact of the canal on the role and development of the surrounding area; this approach will thus lead to the development of the varied features of the present landscape (natural, historical and urban) and the potential they offer for evoking the area as it used to be.

Interpretation panels, guided tours and animation activities (talks, shows, etc.) will give visitors the chance to get to know the site, enjoy varied experiences and deepen their knowledge of different facets of the technological and commercial history of the Chambly Canal.

- **Establishment of interpretation circuits**

The establishment of interpretation circuits along the navigation route will give visitors the opportunity to discover and enjoy, in the context of a tour, the heritage and natural resources which abound along the canal corridor between Chambly and St. Jean.

To this end, the old towpath will be converted into a multipurpose path open to cyclists and pedestrians. The installation of interpretation panels and modules and the distribution of a visitor's guide (folder, cassette, etc.) could be useful tools for facilitating self-interpretation of the different resources associated with the canal's history. Furthermore, the presence of lockmasters and their participation in canal operations will continue to add a human dimension to the interpretation of the site. Guided tours and special activities may also occasionally be organized, depending on demand and the resources available. Interpretation cruises on the canal may eventually be set up by the private sector, from Chambly and/or St. Jean, to enable a larger number of visitors to enjoy the experience of sailing as part of an educational activity.

In addition, the creation on Fryer Island of an activity centre focusing on interpretation of the natural environment

will help make visitors aware of the special features of this area along the Chambly Canal, while adding to the variety and interest of the interpretation tour.

In line with the approach chosen, the interpretation plan will specify, in the next planning stages, the organization of thematic content, the presentation sites selected, and the communication tools most suitable for easily exposing the themes relating to the canal's history to the different categories of visitors.

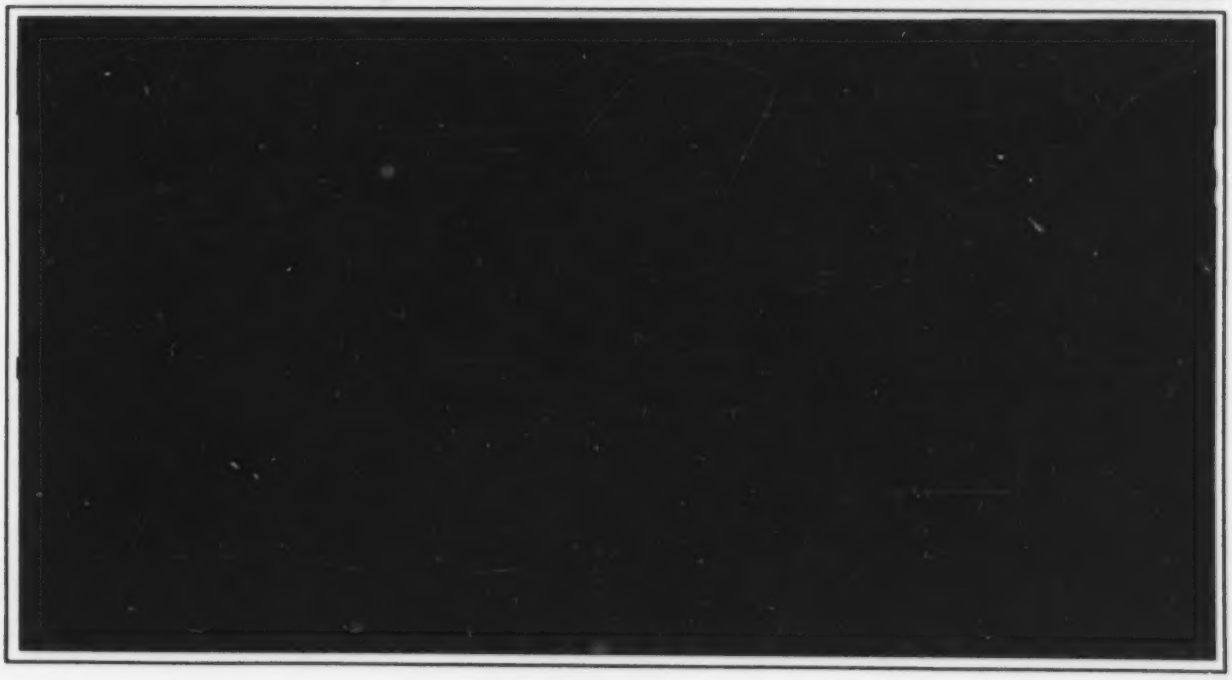
4.3.4 Protection of the natural environment

At the Chambly Canal, the components of the natural environment are largely seen as part of the environmental setting in which the different activities take place. Indeed, this is the basis on which these resources are protected since, generally speaking, they offer no exceptional features likely to give them a particular heritage value.

Thus, within the framework of the program to stabilize and develop the banks, the preservation of existing vegetation, recolonization of plantlife and planting of indigenous species are all measures that will contribute to re-establishing a natural atmosphere along the canal while maintaining views through to the river.

Special protection will also be given to a number of areas whose resources present special features owing to their rarity or fragility. Thus, in the Fryer Island sector, zoning for natural resource conservation purposes reserves a small island south of the

ZONING



dam for complete conservation, where any form of access and development will be prohibited. This island is representative of the wetland vegetation on the periphery of Fryer Island. A special conservation zone along the east bank of Fryer Island, where educational and/or controlled recreational use is planned, is also intended to protect rare plant groupings and habitats conducive to the presence of batrachia and birds.

As far as the aquatic environment is concerned, the participation of the municipalities of the Upper Richelieu in the Quebec government's water treatment program will have a positive impact on the quality of water in the river and, consequently, in the Chambly Canal. A Departmental study has also looked at the potential use of part of the Chambly Canal as a diversion channel, in order to facilitate runoff when the Richelieu River is in spate. The conclusions of this study are to be submitted to the International Joint Commission on Boundary Waters for a decision on the measures recommended.

4.3.5 Recreation

In terms of recreation, the development program aims for greater public access to the banks of the canal for activities compatible with resource conservation that complement interpretation activities by promoting enjoyment of these resources.

So non-organized recreational activities requiring no sport or competition-type supervision, such as nature watching, hiking, cycling and picnicking, will be favoured along the canal. But the support facilities provided for these activities may occasionally, following special agreements, be placed at the disposal of groups or organizations for special activities (popular events...). The use of the canal waterway for purposes other than navigation will be tightly controlled. Water-skiing and swimming will be prohibited within canal limits, and air traffic (seaplanes) will be subject to regulations to eliminate the slightest risk of accidents along the waterway, particularly in the St. Therese Island sector.

The canal banks may also be used for sport fishing, but for reasons of safety and incompatibility with other forms of activity, sport fishing will be prohibited at certain specific spots, in particular near locks and bridges when the canal is in operation. Other activities, such as hunting and horseback riding, will be prohibited on canal property. Nor will camping services be provided along the Chambly Canal.

Furthermore, since the canal lies in and near major urban areas, it is not planned to establish restaurant services. But, given the potential for visitors on the multipurpose path, it could be desirable to set up a snack service in the more isolated Fryer Island sector in season, to be run by a co-operative non-profit organization or a private firm.

The practice of winter activities compatible with the nature of the site will also be encouraged. Thus, the canal banks may be used for cross-country skiing, and arrangements may be made with interested organizations or municipalities for specific maintenance.

The Canadian Parks Service will also continue its agreements with the municipalities in order to place at their disposal sectors of the canal which are suitable for skating rinks. The main services and support facilities will, however, continue to be provided by the municipalities concerned.

4.3.6 Access and traffic

The approach chosen takes into account the configuration of the site and the special features of the region in which the canal corridor lies. It aims, on the one hand, to create a bicycle and pedestrian link between Chambly and St. Jean and, on the other hand, to establish access points integrated into the regional traffic network.

Thus, the use of the canal banks for non-motorized recreational traffic will help create a functional link between the various development areas planned and facilitate access to the points of interest along the canal. Special attention will be paid to development of the multipurpose path, design of the signage system and procedures for operating the road bridges in order to minimize conflicts between the different types of traffic (water, road, bicycle and pedestrian) while ensuring the safety of the various users.

In addition, given the tourist clientele and the local population to be served, access to the canal corridor will be favoured from urban areas and the region's main highways.

Thus, major access points for motorists are planned in Chambly and St. Jean, while secondary points will be developed alongside Highway 223 outside these urban centres. Access for pedestrians and cyclists and cross-canal links will be from existing infrastructures and structures along the canal.

The service road on the west bank of the canal in Chambly will retain its current role as well as being used as a secondary loop in the multipurpose path. It will therefore be used by cyclists and pedestrians; although some automobile access will be allowed, this will be subject to control procedures to be specified when a canal property management plan is drawn up.

4.3.7 Regional integration: tourism, marketing and partnership

The Chambly Canal is integrated with the Northeastern U.S. circuit of navigable waterways as well as being, in regional terms, one of the components of the tourist and recreational network of the Richelieu Valley. The development concept for the entire canal property was thus drawn up in the context of integration with this network as a whole; it aims to consolidate the heritage and recreational role of the site in order to further emphasize its distinctive character and thus ensure the varied and complementary nature of the areas of interest in the region.

Thus, the preservation and development of canal structures, the development of educational and recreational activity centres and the establishment of a bicycle path linking Chambly and St. Jean are all measures intended to create a tourist corridor integrated into the Richelieu "garden valley" circuit[9]. Moreover, the preservation and development of this heritage grouping should have a positive impact on the region's tourism development, notably by encouraging visitors to stay longer and contributing to enriching their experience.

In order to find out the main characteristics of these visitors and to evaluate current and future trends in the Richelieu Valley's tourist market, as well as the importance of the role which the Chambly Canal is destined to play within this market, a socio-economic research program will be undertaken over the next few years. These different research projects should also help to determine the nature, scope and order of priority of certain work planned within the framework of the development program.

These studies will also make it possible to draw up promotion and marketing strategies geared to the particular tourism context of the Richelieu Valley and effectively and harmoniously integrated with municipal, regional and provincial marketing programs. A marketing and communication plan may thus be developed for the Chambly Canal, and discussions may be held with other points of interest for tourism in the region so as to establish an integrated, complementary approach to promotion.

In local terms, the Chambly Canal is one of the area's recreational facilities, contributing greatly to the well-being of the local population. Thus, the Canadian Parks Service intends to reconcile the work planned on canal property with that of the various local organizations. These organizations will also be invited, through agreements, concessions or co-operative associations, to take part in the establishment and management of certain services and activities that will be offered along the Chambly Canal.

9. *Guide touristique, Montérégie* (*Montérégie tourist guide*), Montérégie regional tourism association and Quebec Department of Tourism, 1988.

The comprehensive plan specifies the functional and spatial organization of the Chambly Canal property; it defines, for each proposed development sector, the functions, activities and facilities required on the basis of the possibilities for integration with the adjacent area.

5.1 CORRIDOR OF THE CANAL AND ITS BANKS

Role

The corridor of the canal and its banks is defined both as a transit route and as an excellent way to reach the various points of interest associated with it.

The recreational function will therefore focus on linear-type activities: pleasure-boating and skating on the canal, and bicycling and walking along the banks.

The preservation development and on-site interpretation of structures, such as locks, bridges, lock houses and bridge keeper's cabins, will give pleasure-boaters and the various users of the canal banks the chance to enjoy the special character of this heritage waterway.

Finally, the treatment of the water in the canal and the development of its surroundings through the planting of indigenous species where needed will contribute considerably to upgrading the general quality of the environment along the canal corridor.

Development

- A multipurpose path (bicycle path and footpath) will be made between Chambly and St. Jean in order to give visitors access to areas of interest for interpretation of history or nature while participating in a recreational activity as part of a pleasant, safe tour. This path, reserved exclusively for non-motorized activities and vehicles, will largely follow the old towpath on the east bank of the canal. Between Chambly and bridge 7, the path will also follow the current service road, on the west bank of the canal, and cross-canal links will be provided by bridges 1, 3, 4, 5 and 7[10].

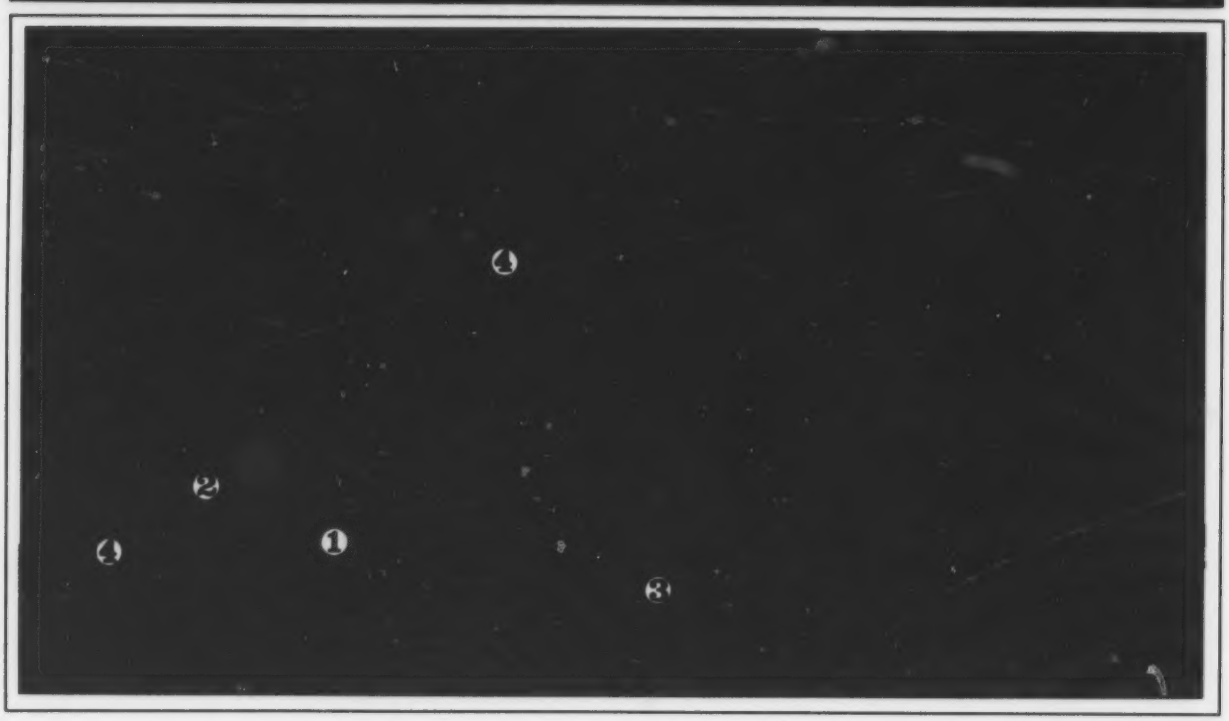
- Throughout the length of the canal, pleasure-boaters, cyclists and pedestrians will be able to enjoy installations (boards, exhibits, etc.) and activities (guided tours, animation, etc.) connected with the interpretation of canal structures and history. Around the locks and bridges, rest and observation areas will be placed at the disposal of visitors. And major service facilities, such as washrooms and parking areas, will be located within development hubs planned along the canal.

- Specific facilities, such as roadside rest areas and landing wharves, may, however, be set up along the canal in order to give motorists and pleasure-boaters access to certain points of special interest.

- Walks reserved for pedestrians may also be developed along the canal, primarily within the urban cores of Chambly and St. Jean.

10. The use of bridge 7 as a bicycle and pedestrian link will require the addition of a walkway and a tunnel, under the eastern approach, for user safety.

CHAMBLY ACTIVITY AREA — DEVELOPMENT ZONES



5.2 CHAMBLY ACTIVITY AREA

Role

Located at the northern end of the canal, the Chambly activity area is defined as a special contact zone between Chambly Basin, the urban area and the canal proper. The long-term development of this sector is thus seen in a perspective of spatial integration of the various federal and municipal public spaces. Ideally, this should translate into the establishment of functional links between the sites of heritage and recreational interest and the creation of a continuous green space on the banks of Chambly Basin. In the short and medium term, the planned intervention zone for development of a multipurpose activity area stretches on Canadian Parks Service land from the mouth of the canal to lock 4.

Considered as one of the major access areas to the corridor of the canal and its banks, the Chambly sector will have the main service facilities associated with visitor reception and interpretation and leisure activities.

Development

Zone 1

- Designed as a departure area for bicycling, skating, walking, interpretation activities and cruises on the canal, the "Parc des Ateliers" will be re-planned in order to create a visitor reception and service area including the following main facilities:[11]
  - — a parking area holding no more than 100 cars (including the existing employee parking lot) so as to be in keeping with the green space characteristic of the site;
  - — a service building designed for year-round use and including, if required:
    - a visitor reception and information area focusing on the region's park and heritage canal network, points of tourist interest in the surrounding area, the region's sailing conditions and facilities, and activities and facilities on the Chambly Canal;
    - an exhibit area on the theme of the Chambly Canal;
    - a multipurpose space that may be used for ticket booths (cruises) and/or bicycle rental;
    - washroom facilities;
    - an area reserved for canal staff;
  - — a picnic and rest area next to the service building;
  - — an outdoor amphitheatre for talks, shows and assemblies;
  - — a cruise departure area on the east bank of the canal.
  - — a link providing safe passage for cyclists and pedestrians between zones 1 and 2.

Zone 2

- To complement existing facilities associated with pleasure-boating (mooring area and marina), an interpretation area will be developed on the site of locks 1, 2 and 3, and support facilities will enable visitors — pleasure-boaters, cyclists and pedestrians — to appreciate the site's special natural and historical features.
- The two old lock houses will be returned to their original sites and used for operations, thus helping to rehabilitate this sector's historical cachet. Once this is done, the lock house presently being used will of course be removed. In the short term, these old lock houses may be used for interpretation or service purposes.
- The redevelopment of the area around the canal may also involve using the old Superintendent's house for canal management and operations as well as public use of the outdoor spaces.

Zone 3

- A rest area and picnic islands, served by the west-bank loop of the multipurpose path, will be set up between bridge 1 and lock 4.

Zone 4

- In the long term, as part of the municipal project to redevelop the banks of Chambly Basin, it is planned that the land on either side of locks 1, 2 and 3 should be part of a continuous public space linking Fort Chambly National Historic Park, the canal and the municipal parks along the shore.

11. The type and scope of these facilities will be specified following completion of the socio-economic study scheduled for 1989-1990.

ST. JEAN ACTIVITY AREA — DEVELOPMENT ZONES

5.3 ST. JEAN ACTIVITY AREA

Role

Located at the southern end of the canal, right alongside downtown St. Jean, this sector marks a transition between the density of the urban environment, the canal corridor proper, and the large body of water of the Richelieu River.

The development of the St. Jean activity area, as in Chambly, aims for better integration of public space. In a long-term perspective and with the participation of the various organizations concerned, this objective should ideally translate into creation of a continuous public space comprising Place du Quai, the site of the first railway station, Laurier municipal park and the site of Fort St. Jean, into the establishment of bicycle paths and footpaths linking the different points of heritage and recreational interest in the surrounding area and, finally, into the redevelopment of the area around the canal and embankment.

In the short and medium term, the Canadian Parks Service will limit its involvement to the federal Chambly Canal property, from the canal entrance to lock 9.

Seen as one of the major access points to the corridor of the canal and its banks, the St. Jean activity area will be devoted to intensive use and will have the main service facilities associated with visitor reception, interpretation and leisure activities.

Development

Zone 1[12]

- Designed both as a public area with water-based and commercial activities nearby and as a departure point for bicycling, interpretation activities and cruises on the Richelieu River, Place du Quai will be redeveloped so as to ensure the harmonious integration of the following main elements:
  - — rest and observation areas along the river and the canal;
  - — multipurpose path from Richelieu Street to the Gouin bridge;
  - — overflow parking lots[13] and service road leading to them;
  - — boarding area for cruises;
  - — mooring area for pleasure craft.
- The location and technical details (high-level vs. low-level) of the new bridge planned between St. Jean and Iberville will have a decisive impact on the spatial organization and establishment of these different elements.
- Place du Quai is an "urban window" on the canal and the river. The development of this feature and the vitality of this square depend, however, on the integration of the urban fabric. So in the relatively long term, the development of Place du Quai should be part of a comprehensive urban redevelopment project (traffic routes, parking areas, etc.) focusing on the revitalization of commercial, recreational and residential functions. This focus requires close co-operation among the various public and private organizations in the area.

Zone 2

- The Gouin bridge may be used as a cross-canal link for cyclists and pedestrians, in which case a ramp will need to be built to give cyclists access to the eastern embankment.
- A walk for pedestrians only may also be made on the west bank between Place du Quai and lock 9.
- A rest and observation area served by the multipurpose path will be set up on the embankment, between the canal entrance and lock 9.

Zone 3

- Considered one of the main points of interest in the St. Jean sector, the site of lock 9 will be partially redeveloped and may include the following elements:
  - — a parking lot alongside Highway 223 (already exists);
  - — a picnic and rest area between the lock and the river;
  - — a service building designed for year-round use, comprising:
    - multipurpose area;
    - washroom facilities;
    - area reserved for staff;
  - — a turn-of-the-century "Neo-Queen Anne" style lock house to replace the present one.
- Finally, the setting-up of an on-site interpretation program will require the establishment of support facilities.

12. This sector is currently the subject of discussions concerning its transfer to the town of St. Jean; and the municipality intends to bear in mind the major priorities already announced by the Canadian Parks Service for the future development of the sector.
13. In addition to the municipal parking lots available nearby.

FRYER ISLAND — DEVELOPMENT ZONES

5.4 FRYER ISLAND ACTIVITY AREA

Role

Located midway between Chambly and St. Jean, Fryer Island is an ideal rest area for cyclists and pleasure-boaters in a conservation setting and natural environment. This sector will therefore be devoted to leisure and interpretation activities. This form of use will help make the island accessible while preventing over-utilization of its resources.

Certain natural features of the environment, such as the banks, marshes and woodlands, are considered conservation areas owing to the rarity or vulnerability of their resources, and consequently they will enjoy special protection measures.

Development

Among major development work on Fryer Island, the following may be involved:

Zone 1

- Acquisition of the northern part of the island, thus providing a bicycle and pedestrian link between Chambly and St. Jean[14] via the old towpath, without having to partially fill in the canal in this sector.

Zone 2[15]

- Development of a lookout near the Fryer dam and eventually, in the longer term, provided local organizations assume responsibility for it, establishment of a bicycle path and footpath linking up with the east bank of the river via this dam.

Zone 3

- Development of a picnic and rest area served by the multipurpose path.
- Establishment of a building with washroom facilities.
- Landscaping of public-use areas and installation of outdoor modules for interpretation of the natural environment.
- Establishment of a landing wharf, with floating docks, along the east bank of the canal.

5.5 BRIDGE 7 REST AREA

Located not far from the Eastern Townships Autoroute, this site is designed both as a rest area and as a secondary departure point for activities along the canal. It will be equipped with the basic facilities associated with visitor reception and leisure activities and may include the following elements:

- parking area (existing);
- picnic and rest area (existing);
- service building (washrooms);
- information modules.

Bridge 7 will be used as a cross-canal link for cyclists and pedestrians and will mark the end of the multipurpose path from Chambly on the west bank of the canal.

5.6 ST. THERESE ISLAND REST AREA

Lying halfway between Fryer Island and St. Jean, this site will also be used as a rest area and secondary point of departure for activities along the canal.

Development of this rest area may include:

- parking area;
- picnic and rest area;
- outdoor information modules.

5.7 ST. JEAN REST AREA

This site, at a point where the embankment widens out north of St. Jean, is suitable for development of a green space which will be used as a rest area for cyclists and pedestrians.

This area will include a picnic and rest area.

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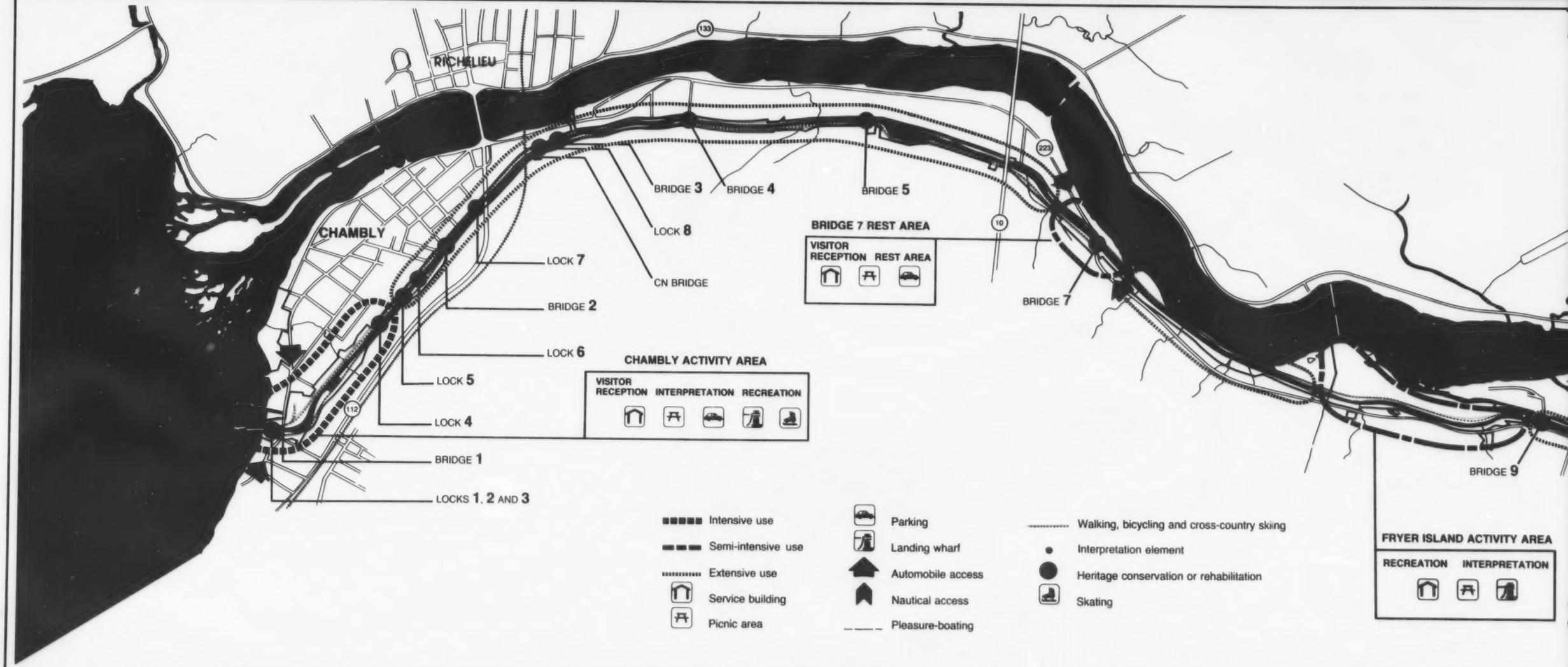
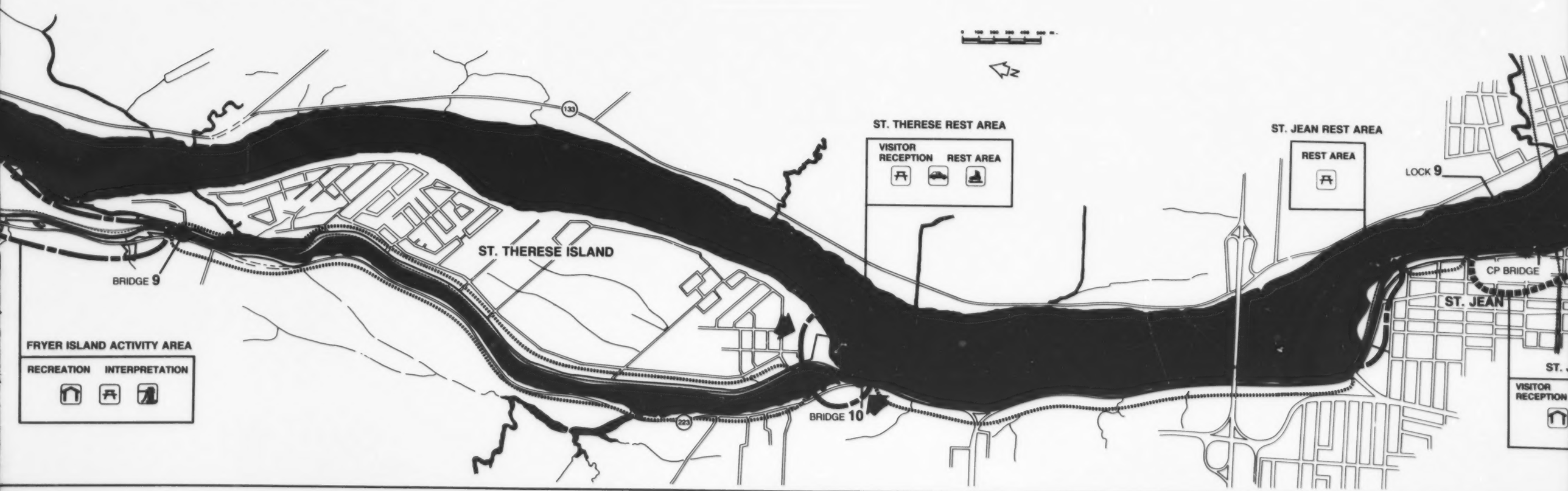
14. This private enclave is the only break in the continuity of the multipurpose path.
15. As mentioned above, the future of the Fryer Island dam is currently under discussion with Treasury Board. Whatever the results of this consultation, the solution chosen should take into account the potential of this dam as a bicycle path.


RICHELIEU
CHAMBLY
133
223
10
112
BRIDGE 3
BRIDGE 4
BRIDGE 5
LOCK 8
LOCK 7
CN BRIDGE
BRIDGE 2
LOCK 6
LOCK 5
LOCK 4
BRIDGE 1
LOCKS 1, 2 AND 3
BRIDGE 7 REST AREA
VISITOR RECEPTION
REST AREA
BRIDGE 7
CHAMBLY ACTIVITY AREA
VISITOR RECEPTION
INTERPRETATION
RECREATION
BRIDGE 9
FRYER ISLAND ACTIVITY AREA
RECREATION
INTERPRETATION
Intensive use
Semi-intensive use
Extensive use
Service building
Picnic area
Parking
Landing wharf
Automobile access
Nautical access
Pleasure-boating
Walking, bicycling and cross-country skiing
Interpretation element
Heritage conservation or rehabilitation
Skating


133
ST. THERESE REST AREA
VISITOR RECEPTION
REST AREA
ST. JEAN REST AREA
REST AREA
LOCK 9
ST. THERESE ISLAND
BRIDGE 9
CP BRIDGE
ST. JEAN
FRYER ISLAND ACTIVITY AREA
RECREATION
INTERPRETATION
223
BRIDGE 10
VISITOR RECEPTION

IBERVILLE
ST. JEAN REST AREA
REST AREA
LOCK 9
Line of proposed bridge
BRIDGE
CP BRIDGE
ST. JEAN
ST. JEAN ACTIVITY AREA
VISITOR RECEPTION
INTERPRETATION
RECREATION

The development guidelines proposed as part of the program to develop the canal property involves, on the one hand, physical reorganization of space for support to the different activities planned and, on the other hand, construction of new buildings and installation of various accessories and fixtures for the safety and well-being of users. And these new features of the landscape, taken together, must fit in harmoniously with the existing landscape of the canal corridor.

The purpose of establishing aesthetic and functional guidelines and criteria[16] is thus to provide direction for the design of the structures, developments and facilities required in order to meet the following objectives:

- to highlight the distinctive character of the Chambly Canal by developing the site's special heritage and marine features;
- to ensure continuity, harmony and consistency throughout the canal corridor.

6.1 PRINCIPLES OF ORGANIZATION AND DESIGN

The basic principles established will help provide direction for the design and organization of the various elements of the landscape in line with the objectives identified.

Identification

The Chambly Canal corridor should reflect its identity, its specific image, which lies basically in the heritage and marine nature of the site. Each of the canal's main sectors (urban, semi-urban and rural) should also be distinguished by its own specific atmosphere. Moreoever, buildings, spaces and facilities should be easily identified with the corresponding activities (navigation, interpretation and recreation). Finally, the appearance of the structures, facilities and accessories should clearly illustrate their period authenticity.

Unity

Unity should be obtained by continuity or the repetition of certain elements of the landscape (fixtures, lighting, surfacing, etc.) along the canal corridor.

Harmony

Harmony should be sought at several levels:

- between the different sectors of the canal and the surrounding area;
- between each sector;
- between each development or facility specific to an activity.

16. For a more detailed description of the elements reviewed in the study, refer to *Canal de Chambly, Motif du paysage et du mobilier*, (Chambly Canal: landscape and fixture design), Engineering and Architecture, Parks Canada, May 1985.

6.2 CRITERIA FOR SELECTING MATERIALS AND FINISHES

The selection of materials and finishes should take into account the principles expressed above as well as the following criteria: solidity, strength, aesthetics, and ease of manufacture and maintenance. The aesthetic effect sought should reflect the character of the original shapes and materials, avoiding superfluous ornamentation and imitations. Finally, the finishes should be selected on the basis of contemporary technology.

6.3 FEATURES OF THE DEVELOPMENT GUIDELINES

Identity of the canal

The preservation of all significant authentic elements from the late 19th and early 20th centuries will contribute to highlighting the identity of the Chambly Canal. This identity will also be spotlighted by the series of new facilities which, while of modern manufacture, will evoke certain special features and will exhibit a marine character.

Unity and continuity along the canal

When converted into a multipurpose path, the towpath will be one of the essential elements that will help ensure unity and continuity along the canal. Using the same surfacing throughout the entire length of this path, for instance, will help link the different sectors of the canal corridor together visually.

This visual continuity will be reinforced by the repeated use of the same types of architectural elements (lock houses, bridge keeper's cabins and service buildings), accessories and fixtures (light standards, benches, guard rails, etc.) and the adoption of a range of materials and colours for the canal corridor as a whole:

- pressure-treated wood, natural or painted white or grey;
- black-painted tubular steel;
- natural, poured or modular concrete.

Harmony with the sectors

Structural elements (buildings and fixtures) will help link the different sectors of the canal together visually. But by highlighting the atmosphere specific to each of these sectors, harmony with the surrounding area will be ensured. This will translate into the organization of space, and the arrangement of plantings and surfacing materials.

The characteristics selected for the development of the three main sectors of the canal are defined as follows:

- Chambly sector: heritage and marine atmosphere
  - — organization of space suitable for evoking turn-of-the-century landscape;
  - — arrangement of paving materials in flexible lines and shapes;
  - — use of plants near buildings and period arrangement.
- St. Jean sector: marine, urban and commercial atmosphere
  - — space structured by the ordered arrangement of fixtures;
  - — arrangement of paving in straight, geometric lines and shapes;
  - — structured planting in lines, tubs or islands.
- Sector between Chambly and St. Jean: rural and pastoral atmosphere
  - — unstructured space;
  - — use of natural-look, flexible paving material;
  - — banks brought back to their natural state;
  - — creation of natural-looking clumps and seeding of wildflowers.

7.1 CANAL PROPERTY

The Canadian Parks Service is responsible for the use and management of the Chambly Canal property. In this capacity, it must ensure that the use of the canal and the adjacent land is consistent with the agency's terms of reference as well as the specific objectives identified for the Chambly Canal.

Thus, management of the canal waters will be based primarily on safe and efficient navigation and will take into account the potential for presentation of heritage resources as well as the imperatives associated with the general quality of the environment.

At the same time, management of public lands (canal property) will be envisaged in line with the objectives of conservation and presentation of the canal's heritage resources and will take into account their potential for use for activities compatible with these objectives as well as imperatives associated with navigation. As for land encroachment, the situation should be straightened out by selling the lots concerned to the property owners along the canal according to the terms decided when the property management plan is drawn up.

7.2 ACTIVITIES AND SERVICES

The Canadian Parks Service will offer the public a program of activities and services which should meet the needs of a varied clientele and will allow for the different periods of activity.

When all the facilities intended for visitor reception and interpretation and recreational activities are completed, the canal corridor will be accessible year-round for varied activities. During the high season, from May to October, visitors will be able to enjoy all the facilities and activities offered during the day, all week long, while during the other months of the year, opening days and hours and services offered will be reduced.

Based on the general guidelines established, a plan of the services offered should give a clearer outline of the different forms of activities and services to visitors being proposed.

7.2.1 Visitor reception services

Visitor reception and orientation and distribution of general information on both the Canadian Parks Service terms of reference and the services and activities offered are essential if users are to be given a professional reception. These elements must therefore be part of the visitor services offered all along the canal, in particular at each lock station. But the scope of these services will be greater within the Chambly and St. Jean activity areas, where visitor reception officers or interpretation guides will be on site.

7.2.2 Interpretation activities

The Chambly area has been selected for personal interpretation services. The interpretation guide service will be concentrated there, as well as a structured school program intended for local and regional school groups. Activities will be arranged for all potential clientele categories (school groups, senior citizens, sightseeing tours, individual visitors, etc.), according to the objectives and guidelines to be established in the service plan. Guided walks may also be offered from this activity area. Finally, depending on requirements and the availability of resources, certain ad-hoc personal activities may also be offered within the other two activity areas, St. Jean and Fryer Island, as well as along the canal.

7.2.3 Navigation services

Like the other canals in the Canadian network, the Chambly Canal will continue to be open to navigation from mid-May to mid-October. Opening hours may vary during the season. In general, however, the canal should be open eight hours a day, and during the high season from the end of June to the end of August, the number of hours could be increased.

Given the length of the canal and the transit time requiered, pleasure-boaters will be allowed to moor their craft there for the night, against payment of a fee, before carrying on their way.

The Canadian Parks Service will ensure safe, efficient navigation by maintaining the canal draft at the required level.

7.2.4 Activities with third parties

As with every site under its jurisdiction, the Canadian Parks Service will favour establishing cooperation agreements with third parties. In such cases, the suitability of a cooperation agreement and viability of a cooperative association which may be created at the Chambly Canal site will be studied.

7.2.5 Public safety

The services, facilities and activities offered along the Chambly Canal will be conceived to ensure a safe environment for the public. The safety guidelines will be provided by the Canadian Parks Service policy, the Ministry's guidelines and the various enactments dealing with the particularities of the management and operation of a historical canal.

8.1 CONSIDERATIONS

The preservation and development of the resources of the Chambly Canal is a major project whose implementation will have to be spread over a number of years and will require the co-operation of different municipal and private bodies.

In fact, the preservation of the heritage character of the canal requires major stabilization and restoration work on structures dating from the late 19th and early 20th centuries. At the same time, the maintenance of pleasure-boating involves developments and facilities which must meet stringent public safety standards. In addition, the Canadian Parks Service is obliged, under its terms of reference, to provide facilities and services to help Canadians understand and enjoy the canal's water and land resources.

The implementation of several proposals contained in this plan depends on the availability of financial resources. Approval of this plan in no way constitutes automatic authorization of the funds required to implement it. The federal government's financial management requirements, fund authorization procedures and directives from central agencies responsible for government spending are considered in each implementation phase. Thus, all major capital projects provided for in the implementation of this master plan will be the subject of development plans that specify the scope and exact nature of the work to be performed, on the basis of the findings of socio-economic analyses when the impact of the number of visitors is a major issue.

8.2 PRIORITIES

Considering the costs involved and the resources available to meet all these requirements, the implementation of the master plan may be spread over a 15-year period. Work will thus be carried out in stages, and priority will be given to those projects judged the most urgent with respect to preservation of heritage resources and access to the canal banks, while maintaining recreational boating.

First of all, stabilization and restoration work on the canal structures will be completed. Secondly, priority will be given to the visitor reception services at either end of the canal and to the creation of a bicycle/pedestrian link (multipurpose path) between Chambly and St. Jean. Lastly, rest areas will be set up along the canal and facilities in the Chambly and St. Jean activity sectors will be completed. In the longer term, partially developed sites will be completed and the network of paths could be extended. At the same time, the necessary steps will be taken to ensure visitor safety.

The historical character and recreational role of the Chambly Canal will thus be further emphasized over the years.

Having played a decisive role in 19th century trade, the Chambly Canal is destined to play a part in the Richelieu Valley's cultural, recreational and tourist boom at the dawn of the 21st century.

Within a few years, Canadians will be in a position to better understand and appreciate the heritage and recreational value of the Chambly Canal, that work of genius whose presence attests still today to an important stage in the development of marine transportation in Canada.

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TECHNICAL DATA SHEET: LOCKS

Features/ locks	Lock 1	Lock 2	Lock 3	Lock 4	Lock 5	Lock 6	Lock 7	Lock 8	Lock 9
Distance from Chambly (kilometres)	0.19	0.23	0.27	1.16	1.35	1.50	2.03	2.57	17.01
Width (metres)	7.09	7.09	7.05	7.04	7.21	6.97	7.09	7.21	7.12
Length (metres)	38.35	38.38	38.40	36.73	36.78	36.78	36.78	38.35	36.75
Total lift (metres)	4.72	2.96	2.99	2.19	2.44	2.50	2.26	2.74	1.58
Year built/ rebuilt	1840-42 1880-86	1840-42 1882-98	1840-42 1882-92	1840-42 1881-90	1835 1885-93	1835 1882-92	1835 1881-94	1833-42 1882-95	1834 1886-1923
Walls (material)	Masonry /wood	Masonry /wood	Masonry /wood	Masonry /wood	Masonry /wood and masonry	Masonry /wood	Masonry /wood and masonry	Masonry /wood and concr.	Masonry /wood and concr.
Condition	Poor	Poor	Poor	Fair	Good	Good	Good	Good	Poor
Operation (sluices/gates)	Elec./ Hand	Elec./ Hand	Elec./ Hand	Hand/ Hand	Hand/ Hand	Hand/ Hand	Hand/ Hand/	Hand/ Hand/	Elec./ Elec.

Concr.: Concrete Elec.: Operated electrically

TECHNICAL DATA SHEET: BRIDGES

Features/ bridges	1	2[1]	CN[3]	3[2]	4[1]	5[1]	7[2]	9[1]	10[1]	10A	CP[3]	12[3]
Type	Swing	Swing	Swing	Rolling	Swing	Swing	Swing	Swing	Swing	Swing	Swing	Lift
Year built	1973-74	1904	—	1925	1921	1914	1926	1887-88	1898-99	1986	—	1915-16
Condition	Good	Good	—	Good	Good	Good	Poor	Good	Good	Good	—	Good
Operation	Elec.	—	Hand	Elec.	Hand	Hand	Elec.	Elec.	—	Elec.	Elec.	Elec.
Capacity (tonnes)	20	—	—	3	8	8	20	H25 (±25t)	—	MS-250 (±28t)	—	15
Traffic	Heavy	—	—	Light	Light	Light	Heavy	Moderate/ Heavy	—	Heavy	—	Heavy

(1) Bridges of similar type
(2) Bridges with distinctive character along the canal
(3) Outside Canadian Parks Service jurisdiction

TECHNICAL DATA SHEET:
LOCK HOUSES AND BRIDGE KEEPER'S CABINS

Location	Year built	Condition	Style
Locks 1, 2 and 3 Bridge 1	1967-68	Good	Modern
Near locks 1, 2 and 3 (2)	1910	Poor	Original
Lock 4	1969-70	Good	Modern
Lock 5	1968-69	Good	Modern
Lock 6	1969-70	Good	Modern
Bridge 2	—	Fair	Original
Lock 7	1910	Good	Original
CN bridge[1]	—	—	—
Lock 8 Bridge 3	1910	Good	Original
Bridge 4	—	Good	Original
Bridge 5	—	Good	Original
Bridge 7	—	Good	Original
Bridge 9	1968-69	Good	Modern
Bridge 10	1969	Good	Modern
Lock 9	1966-67	Good	Modern
CP bridge[1] Bridge 12 (Gouin)[1]	— 1972	Good	— Modern

1 Outside Canadian Parks Service jurisdiction